

READ ME

These are the changes made to the QAPP tables

Table 1

Added contact information for Axys and TestAmerica, Seattle

Table 2a SMA Sediment

Chlorinated pesticides

Removed specific isomers from DDx compounds to match ROD table per EPA comment 10

Dioxins and Furans

Added estimated detection limits column using data from TA

Updated PQLs and MDLs using data from TA

Corrected 2,3,7,8-Tetrachlorodibenzofuran (TCDF) Clean up level per EPA comment 9

Grain Size

Updated grain size method from D422 to D7928 and D6913 per EPA comment 13

Atterburg limits

Added Atterberg limits to the table per EPA FSP comment

PCB Congeners

Updated PCB 46 MDL per EPA comment 22

Updated PCB 209 LCS and MS limits per TA data

PCB Aroclors

Updated reporting units to ug/kg per EPA comment 11

Notes

Added footnote 2 to specify laboratory reporting on dry weight bases per EPA comment 14

Added footnote 3 stating laboratory will analyze for 2,4 and 4,4 isomers of DDx compounds

Added note stating listed limits are for information purposes only per EPA comment to be considered 3

Table 2b Surface Sediment

Chlorinated pesticides

Removed specific isomers from DDx compounds to match ROD table per EPA comment 10

Dioxins and Furans

Added estimated detection limits column using data from TA

Updated PQLs and MDLs using data from TA

Corrected 2,3,7,8-Tetrachlorodibenzofuran (TCDF) Clean up level per EPA comment 9

Grain Size

Updated grain size method from D422 to D7928 and D6913 per EPA comment 13

PCB Congeners

Updated PCB 46 MDL per EPA comment 22

TPH Diesel

Updated compound name per EPA matters of style comment 7 and TA input

Updated LCS and MS limits per TA input

Notes

Added footnote 3 stating laboratory will analyze for 2,4 and 4,4 isomers of DDx compounds

Added note stating listed limits are for information purposes only per EPA comment to be considered 3

Removed CA from abbreviations list

Table 2c Surface Water

MCCP (Low volume samples)

Updated LCS limit per TA input

Total Solids (Low volume samples)

Updated PQL, MDL and LCS limits per TA input

Updated reference method for TDS.

Metals (Low volume samples)

Updated method from 6020B to 6020B LL per TA input

High Volume Samples

Updated PQLs to mass/volume unit for all analytes per EPA comment 15

Chlorinated pesticides

Removed specific isomers from DDx compounds to match ROD table per EPA comment 10

Notes

Added footnote 3 stating laboratory will analyze for 2,4 and 4,4 isomers of DDx compounds

Updated footnote 4 describing EDL per TA input

Updated footnote 5 describing fractionation of HVS samples and reporting units per EPA comment 15

Added note stating listed limits are for information purposes only per EPA comment to be considered 3

Table 2d Porewater

Arsenic

Bolded Cleanup level, PQL and MDL to signify clean level is lower than laboratory limits per EPA comment 16

Bromide

Added bromide to the parameter list as the tracer for the porewater study per EPA comment to porewater FSP

Notes

Added footnote 2 for bromide

Added note stating listed limits are for information purposes only per EPA comment to be considered 3

Table 2e Fish Tissue

Notes

Corrected footnote numbering per EPA to be considered comment 17

Added note stating listed limits are for information purposes only per EPA comment to be considered 3

Table 3 DQOs

Surface Sediment

Updated Goal of the Study cell to include text from table 4 of the work plan per EPA comment 4

Updated Analytical Approach cell to include text from table 8 of work plan per EPA comments 19 and 20

Sediment Trap

Updated Analytical Approach cell per EPA comment 21 (contaminant loading)

Updated RM for sediment trap location (Step 7)

Subsurface Sediment

Updated Analytical Approach cell to include text from table 8 of work plan per EPA comment 19

Surface Water

Updated Goal of the Study cell to include determine baseline conditions per EPA comment 18

Atterberg limits

Added Atterberg DQOs per EPA comment to sediment FSP

Table 4 Sample ID

QA/QC

Removed MS/MSD from sample ID component 6 per EPA to be considered comment 9

Surface Water Examples

Added example of ethy benzene sample

Table 5 Sample Containers

Sediments

Updated grain size method from D422 to D7928 and D6913 per EPA comment 13

Added Atterberg limits to the table per EPA FSP comment

Updated dioxin/furan and metals archive per TA inputs

Updated sample containers per TA inputs

Water

Updated DOC preservation to include field filtering per EPA comment 4

Added bromide to the parameter list as the tracer for the porewater study per EPA comment to porewater FSP

Updated dioxin/furan and metals archive per TA inputs

Updated sample containers per TA inputs

Table 6 Field QC

Sediment

Added Atterberg Limits

Water

Added Bromide

Corrected spelling of "hexachlorobenzene"

Table 7 Lab QC

Added Anions and Atterberg limits

Updated Grain Size methods

Updated Metals methods

Table 8 Data Uses

New Table

Table 1. PDI Project Personnel Contact Information

Key Role	Name	Telephone Numbers	Email Address	Mailing Address
Pre-RD AOC Group				
PDI Project Coordinator	Ken Tyrrell	(b) (6)	ken.tyrrell@aecom.com	1111 Third Ave. Suite 1600 Seattle, WA 98101
US Environmental Protection Agency				
RPM	Davis Zhen	206-553-7660	zhen.davis@epa.gov	EPA Region 10 1200 Sixth Ave. Seattle, WA 98101
AECOM Technical Services				
PDI Project Manager	Jenny Pretare	(b) (6)	jennifer.pretare@aecom.com	1111 Third Ave. Suite 1600 Seattle, WA 98101
Project QA/QC Manager	Amy Dahl		amy.dahl@aecom.com	
Project Technical Lead	Betsy Ruffle		betsy.ruffle@aecom.com	250 Apollo Drive Chelmsford, MA 01884
Field Coordinator	Nicky Moody		nicky.moody@aecom.com	111 SW Columbia Ave. Suite 1500 Portland, OR 97201
Project Data Management	Mike Surowiec		mike.surowiec@aecom.com	1111 Third Ave. Suite 1600 Seattle, WA 98101
Project Data Management	Cary Kindberg		cary.kindberg@aecom.com	
Chemistry	Karen Mixon		karen.mixon@aecom.com	
Health & Safety	Fred Merrill		fred.merrill@aecom.com	
Geosyntec Consultants, Inc.				
Project Technical Lead	Anne Fitzpatrick	(b) (6)	afitzpatrick@geosyntec.com	520 Pike Street Suite 1375 Seattle, WA 98101
Field Coordinator	Keith Kroeger		kkroeger@geosyntec.com	621 SW Morrison Street Suite 600 Portland, OR 97205
Chemistry	Julia Klens Caprio		jklenscaprio@geosyntec.com	180A Marketplace Blvd. Knoxville, TN 37922
AECOM Sampling Processing Facility				
Field Coordinator	Keith Kroeger	(b) (6)	kkroeger@geosyntec.com	1115 SE Caruthers Street Portland, OR 97214
Field Coordinator	Nicky Moody		nicky.moody@aecom.com	
Project Field Team	Alison Clements		aclements@geosyntec.com	
Field Team	Erin Dunbar		edunbar@geosyntec.com	

Key Role	Name	Telephone Numbers	Email Address	Mailing Address
ALS Global				
PM	Howard Holmes	360-577-7222	howard.holmes@alsglobal.com	1317 S. 13th Ave. Kelso, WA 98626
Ballard Marine				
PM	Robert Stanton	360-695-5163	robert.stanton@ballardmc.com	727 S. 27th Street Washougal, WA 98671
David Evans & Associates				
PM	Jon Dasler	360-314-3200	jld@deainc.com	2100 SW River Parkway Portland, OR 97201
Gravity Marine				
Project Manager	Shawn Hinz	425-281-1471	shinz@gravitycon.com	32617 SE 44th Street Fall City, WA 98024
HTI-Vemco				
PM	TBD	206-633-3383	TBD	711 NE Northlake Way Seattle WA 98105
Global Diving and Salvage				
PM	Spencer McGinnis	(b) (6)	spencer.mcginis@gdiving.com	3840 W Marginal Way SW Seattle, WA 98106
SGS/AXYS Laboratory				
PM	Sean Campbell	(b) (6)	sean.campbell@sgs.com	2045 W. Mills Road Sidney, BC Canada V8L 5X2
TestAmerica Laboratory, Seattle				
PM	Elaine Walker	(b) (6)	Elaine.Walker@testamericainc.com	5755 E.8th Street Tacoma, WA 98424
TestAmerica Laboratory, Sacramento				
PM	TBD	916-373-5600	TBD	880 Riverside Parkway West Sacramento, CA 95605
TestAmerica Laboratory, Knoxville				
PM	TBD	865-291-3000	TBD	5815 Middlebrook Pike Knoxville, TN 37921

Notes:

This list will be updated throughout the project and distributed to all parties working on the project at time of update.

Acronyms:

EPA = U.S. Environmental Protection Agency

PM = project manager

Pre-RD AOC Group = Pre-Remedial Design Agreement and Order on Consent Group

QA/QC = quality assurance/quality control

RPM = remedial project manager

TBD = to be determined

Table 2a. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in Targeted SMA Sediment Samples (Surface and Subsurface)

PARCCS:	Comparability			Sensitivity					Accuracy and Precision							
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits ²	Achievable Laboratory MDLs ²	Laboratory EDLs	Units	MS/MSD				LCS/LCSD			
									Percent Recovery (%)		RPD (%)	Percent Recovery (%)		RPD (%)		
Surface Sediment																
Semi Volatile Organic Compounds																
bis-(2-ethylhexyl) phthalate (BEHP)	117-81-7	ALS Kelso	EPA 8270D-LL	135	100	8.9		µg/kg	23	--	123	40	39	--	113	40
Chlorinated Pesticides																
Aldrin	309-00-2	ALS Kelso	EPA GC/MS/MS 1699M	2	0.1	0.079		µg/kg	52	--	151	30	74	--	122	30
Chlordanes (alpha, gamma, technical)	57-74-9	ALS Kelso	EPA GC/MS/MS 1699M	1.4	0.1	0.062		µg/kg	31	--	156	30	74	--	130	30
DDx	--	ALS Kelso	EPA GC/MS/MS 1699M	6.1	0.1	--		µg/kg	--	--	--	--	--	--	--	--
DDD ³	--	ALS Kelso	EPA GC/MS/MS 1699M	114	0.1	0.06		µg/kg	10	--	190	30	74	--	117	30
DDE ³	--	ALS Kelso	EPA GC/MS/MS 1699M	226	0.1	0.07		µg/kg	43	--	155	30	54	--	145	30
DDT ³	--	ALS Kelso	EPA GC/MS/MS 1699M	246	0.1	0.09		µg/kg	24	--	183	30	78	--	116	30
Dieldrin	60-57-1	ALS Kelso	EPA GC/MS/MS 1699M	0.07	0.2	0.01		µg/kg	28	--	150	30	62	--	131	30
Lindane	58-89-9	ALS Kelso	EPA GC/MS/MS 1699M	5	0.1	0.031		µg/kg	64	--	135	30	79	--	116	30
Dioxins/Furans ⁴																
Dioxins/Furans (2,3,7,8-TCDD eq)	--	TA Sacramento	EPA 1613B		NA	NA		NA	--	--	--	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1746-01-6	TA Sacramento	EPA 1613B	0.20	1.0	0.15	0.028	pg/g	--	--	--	--	67	--	158	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	40321-76-4	TA Sacramento	EPA 1613B	0.20	5.0	0.300	0.030	pg/g	--	--	--	--	70	--	142	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	39227-28-6	TA Sacramento	EPA 1613B	NA	5.0	0.71	0.025	pg/g	--	--	--	--	70	--	164	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	57653-85-7	TA Sacramento	EPA 1613B	NA	5.0	0.58	0.025	pg/g	--	--	--	--	76	--	134	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	19408-74-3	TA Sacramento	EPA 1613B	NA	5.0	0.58	0.022	pg/g	--	--	--	--	64	--	162	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	35822-46-9	TA Sacramento	EPA 1613B	NA	5.0	0.46	0.038	pg/g	--	--	--	--	70	--	140	--
1,2,3,4,5,6,7,8-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9	TA Sacramento	EPA 1613B	NA	10.0	1.5	0.053	pg/g	--	--	--	--	78	--	144	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	51207-31-9	TA Sacramento	EPA 1613B	0.407	1.0	0.11	0.015	pg/g	--	--	--	--	75	--	158	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	57117-41-6	TA Sacramento	EPA 1613B	NA	5.0	0.27	0.018	pg/g	--	--	--	--	80	--	134	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	57117-31-4	TA Sacramento	EPA 1613B	0.30	5.0	0.29	0.019	pg/g	--	--	--	--	68	--	160	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	70648-26-9	TA Sacramento	EPA 1613B	0.40	5.0	0.3	0.023	pg/g	--	--	--	--	72	--	134	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	57117-44-9	TA Sacramento	EPA 1613B	NA	5.0	0.38	0.021	pg/g	--	--	--	--	84	--	130	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	72918-21-9	TA Sacramento	EPA 1613B	NA	5.0	0.43	0.017	pg/g	--	--	--	--	78	--	130	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	60851-34-5	TA Sacramento	EPA 1613B	NA	5.0	0.3	0.017	pg/g	--	--	--	--	70	--	156	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	67562-39-4	TA Sacramento	EPA 1613B	NA	5.0	0.38	0.043	pg/g	--	--	--	--	82	--	122	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	55673-89-7	TA Sacramento	EPA 1613B	NA	5.0	0.65	0.059	pg/g	--	--	--	--	78	--	138	--
1,2,3,4,5,6,7,8-Octachlorodibenzofuran (OCDF)	39001-02-0	TA Sacramento	EPA 1613B	NA	10.0	1.2	0.032	pg/g	--	--	--	--	63	--	170	--
Grain Size																
Clay	STL00587	TA Seattle	ASTM D7928 and D6913	NA	0.010	NA		%	--	--	--	--	--	--	--	--
Coarse Sand	STL00583	TA Seattle	ASTM D7928 and D6913	NA	0.010	NA		%	--	--	--	--	--	--	--	--
Fine Sand	STL00585	TA Seattle	ASTM D7928 and D6913	NA	0.010	NA		%	--	--	--	--	--	--	--	--
Gravel	STL00581	TA Seattle	ASTM D7928 and D6913	NA	0.010	NA		%	--	--	--	--	--	--	--	--
Medium Sand	STL00584	TA Seattle	ASTM D7928 and D6913	NA	0.010	NA		%	--	--	--	--	--	--	--	--
Silt	STL00586	TA Seattle	ASTM D7928 and D6913	NA	0.010	NA		%	--	--	--	--	--	--	--	--

Table 2a. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in Targeted SMA Sediment Samples (Surface and Subsurface)

PARCCS:	Comparability			Sensitivity					Accuracy and Precision						
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits ²	Achievable Laboratory MDLs ²	Laboratory EDLs	Units	MS/MSD			LCS/LCSD			
									Percent Recovery (%)		RPD (%)	Percent Recovery (%)		RPD (%)	
Atterberg Limits															
Atterberg Limits	--	TA Burlington	ASTM D4318	NA	--	NA		%	--	--	--	--	--	--	--
PAHs															
PAHs	NA	ALS Kelso	EPA 8270D-SIM	23000	NA	NA		µg/kg	--	--	--	--	--	--	--
cPAHs (BaP equivalent)	NA	ALS Kelso	EPA 8270D-SIM	12	NA	NA		µg/kg	--	--	--	--	--	--	--
Acenaphthene	83-32-9	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.032		µg/kg	51	--	82	40	70	--	130
Acenaphthylene	208-96-8	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.029		µg/kg	51	--	80	40	70	--	130
Anthracene	120-12-7	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.026		µg/kg	56	--	87	40	70	--	130
Benzo(a)anthracene	56-55-3	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.033		µg/kg	65	--	97	40	70	--	130
Benzo(a)pyrene	50-32-8	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.036		µg/kg	64	--	103	40	70	--	130
Benzo(b)fluoranthene	205-99-2	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.057		µg/kg	63	--	99	40	70	--	130
Benzo(g,h,i)perylene	191-24-2	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.059		µg/kg	56	--	101	40	70	--	130
Benzo(k)fluoranthene	207-08-9	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.045		µg/kg	62	--	99	40	70	--	130
Chrysene	218-01-9	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.027		µg/kg	63	--	100	40	70	--	130
Dibenz(a,h)anthracene	53-70-3	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.058		µg/kg	56	--	104	40	70	--	130
Fluoranthene	206-44-0	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.032		µg/kg	45	--	96	40	70	--	130
Fluorene	86-73-7	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.039		µg/kg	52	--	83	40	70	--	130
Indeno(1,2,3-cd)pyrene	193-39-5	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.064		µg/kg	61	--	105	40	70	--	130
2-Methylnaphthalene	91-57-6	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.047		µg/kg	52	--	85	40	70	--	130
Naphthalene	91-20-3	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.089		µg/kg	48	--	77	40	70	--	130
Phenanthrene	85-01-8	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.033		µg/kg	48	--	85	40	70	--	130
Pyrene	129-00-0	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.032		µg/kg	59	--	98	40	70	--	130
PCB Congeners (surface grabs only)⁴															
Total PCBs	--	TA Knoxville	EPA 1668A	9	NA	NA		ng/g	--	--	--	--	--	--	--
PCB 1	2051-60-7	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	50	--	150	50	50	--	150
PCB 2	2051-61-8	TA Knoxville	EPA 1668A	NA	0.010	0.0023		ng/g	--	--	--	--	--	--	--
PCB 3	2051-62-9	TA Knoxville	EPA 1668A	NA	0.010	0.0021		ng/g	50	--	150	50	50	--	150
PCB 4	13029-08-8	TA Knoxville	EPA 1668A	NA	0.020	0.0035		ng/g	50	--	150	50	50	--	150
PCB 5	16605-91-7	TA Knoxville	EPA 1668A	NA	0.010	0.0026		ng/g	--	--	--	--	--	--	--
PCB 6	25569-80-6	TA Knoxville	EPA 1668A	NA	0.010	0.0022		ng/g	--	--	--	--	--	--	--
PCB 7	33284-50-3	TA Knoxville	EPA 1668A	NA	0.010	0.0038		ng/g	--	--	--	--	--	--	--
PCB 8	34883-43-7	TA Knoxville	EPA 1668A	NA	0.020	0.0020		ng/g	--	--	--	--	--	--	--
PCB 9	34883-39-1	TA Knoxville	EPA 1668A	NA	0.010	0.0037		ng/g	--	--	--	--	--	--	--
PCB 10	33146-45-1	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--
PCB 11	2050-67-1	TA Knoxville	EPA 1668A	NA	0.020	0.0090		ng/g	--	--	--	--	--	--	--
PCB 12	2974-92-7	TA Knoxville	EPA 1668A	NA	0.020	0.012		ng/g	--	--	--	--	--	--	--
PCB 13	2974-90-5	TA Knoxville	EPA 1668A	NA	0.020	0.012		ng/g	--	--	--	--	--	--	--
PCB 14	34883-41-5	TA Knoxville	EPA 1668A	NA	0.010	0.0035		ng/g	--	--	--	--	--	--	--
PCB 15	2050-68-2	TA Knoxville	EPA 1668A	NA	0.010	0.0048		ng/g	50	--	150	50	50	--	150
PCB 16	38444-78-9	TA Knoxville	EPA 1668A	NA	0.010	0.0072		ng/g	--	--	--	--	--	--	--
PCB 17	37680-66-3	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--
PCB 18	37680-65-2	TA Knoxville	EPA 1668A	NA	0.020	0.014		ng/g	--	--	--	--	--	--	--
PCB 19	38444-73-4	TA Knoxville	EPA 1668A	NA	0.010	0.0021		ng/g	50	--	150	50	50	--	150
PCB 20	38444-84-7	TA Knoxville	EPA 1668A	NA	0.020	0.0056		ng/g	--	--	--	--	--	--	--
PCB 21	55702-46-0	TA Knoxville	EPA 1668A	NA	0.020	0.0066		ng/g	--	--	--	--	--	--	--
PCB 22	38444-85-8	TA Knoxville	EPA 1668A	NA	0.010	0.0023		ng/g	--	--	--	--	--	--	--

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Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits ²	Achievable Laboratory MDLs ²	Laboratory EDLs	Units	MS/MSD				LCS/LCSD				
									Percent Recovery (%)		RPD (%)	Percent Recovery (%)		RPD (%)			
PCB 23	55720-44-0	TA Knoxville	EPA 1668A	NA	0.010	0.0021		ng/g	--	--	--	--	--	--	--		
PCB 24	55702-45-9	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--		
PCB 25	55712-37-3	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--		
PCB 26	38444-81-4	TA Knoxville	EPA 1668A	NA	0.020	0.0046		ng/g	--	--	--	--	--	--	--		
PCB 27	38444-76-7	TA Knoxville	EPA 1668A	NA	0.010	0.0021		ng/g	--	--	--	--	--	--	--		
PCB 28	7012-37-5	TA Knoxville	EPA 1668A	NA	0.020	0.0056		ng/g	--	--	--	--	--	--	--		
PCB 29	15862-07-4	TA Knoxville	EPA 1668A	NA	0.020	0.0046		ng/g	--	--	--	--	--	--	--		
PCB 30	35693-92-6	TA Knoxville	EPA 1668A	NA	0.020	0.014		ng/g	--	--	--	--	--	--	--		
PCB 31	16606-02-3	TA Knoxville	EPA 1668A	NA	0.020	0.0022		ng/g	--	--	--	--	--	--	--		
PCB 32	38444-77-8	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--		
PCB 33	38444-86-9	TA Knoxville	EPA 1668A	NA	0.020	0.0066		ng/g	--	--	--	--	--	--	--		
PCB 34	37680-68-5	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--		
PCB 35	37680-69-6	TA Knoxville	EPA 1668A	NA	0.010	0.0027		ng/g	--	--	--	--	--	--	--		
PCB 36	38444-87-0	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--		
PCB 37	38444-90-5	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	50	--	150	50	50	--	150	50	
PCB 38	53555-66-1	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--	
PCB 39	38444-88-1	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--	
PCB 40	38444-93-8	TA Knoxville	EPA 1668A	NA	0.030	0.013		ng/g	--	--	--	--	--	--	--	--	
PCB 41	52663-59-9	TA Knoxville	EPA 1668A	NA	0.030	0.013		ng/g	--	--	--	--	--	--	--	--	
PCB 42	36559-22-5	TA Knoxville	EPA 1668A	NA	0.010	0.0033		ng/g	--	--	--	--	--	--	--	--	
PCB 43	70362-46-8	TA Knoxville	EPA 1668A	NA	0.020	0.0048		ng/g	--	--	--	--	--	--	--	--	
PCB 44	41464-39-5	TA Knoxville	EPA 1668A	NA	0.030	0.015		ng/g	--	--	--	--	--	--	--	--	
PCB 45	70362-45-7	TA Knoxville	EPA 1668A	NA	0.020	0.010		ng/g	--	--	--	--	--	--	--	--	
PCB 46	41464-47-5	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--	
PCB 47	2437-79-8	TA Knoxville	EPA 1668A	NA	0.030	0.015		ng/g	--	--	--	--	--	--	--	--	
PCB 48	70362-47-9	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--	
PCB 49	41464-40-8	TA Knoxville	EPA 1668A	NA	0.020	0.0054		ng/g	--	--	--	--	--	--	--	--	
PCB 50	62796-65-0	TA Knoxville	EPA 1668A	NA	0.020	0.0060		ng/g	--	--	--	--	--	--	--	--	
PCB 51	68194-04-7	TA Knoxville	EPA 1668A	NA	0.020	0.010		ng/g	--	--	--	--	--	--	--	--	
PCB 52	35693-99-3	TA Knoxville	EPA 1668A	NA	0.010	0.0029		ng/g	--	--	--	--	--	--	--	--	
PCB 53	41464-41-9	TA Knoxville	EPA 1668A	NA	0.020	0.0060		ng/g	--	--	--	--	--	--	--	--	
PCB 54	15968-05-5	TA Knoxville	EPA 1668A	NA	0.010	0.0023		ng/g	50	--	150	50	50	--	150	50	
PCB 55	74338-24-2	TA Knoxville	EPA 1668A	NA	0.010	0.0026		ng/g	--	--	--	--	--	--	--	--	
PCB 56	41464-43-1	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--	
PCB 57	70424-67-8	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--	
PCB 58	41464-49-7	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--	
PCB 59	74472-33-6	TA Knoxville	EPA 1668A	NA	0.030	0.016		ng/g	--	--	--	--	--	--	--	--	
PCB 60	33025-41-1	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--	
PCB 61	33284-53-6	TA Knoxville	EPA 1668A	NA	0.040	0.011		ng/g	--	--	--	--	--	--	--	--	
PCB 62	54230-22-7	TA Knoxville	EPA 1668A	NA	0.030	0.016		ng/g	--	--	--	--	--	--	--	--	
PCB 63	74472-34-7	TA Knoxville	EPA 1668A	NA	0.010	0.0027		ng/g	--	--	--	--	--	--	--	--	
PCB 64	52663-58-8	TA Knoxville	EPA 1668A	NA	0.010	0.0027		ng/g	--	--	--	--	--	--	--	--	
PCB 65	33284-54-7	TA Knoxville	EPA 1668A	NA	0.030	0.015		ng/g	--	--	--	--	--	--	--	--	
PCB 66	32598-10-0	TA Knoxville	EPA 1668A	NA	0.010	0.0024		ng/g	--	--	--	--	--	--	--	--	
PCB 67	73575-53-8	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--	
PCB 68	73575-52-7	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--	
PCB 69	60233-24-1	TA Knoxville	EPA 1668A	NA	0.020	0.0054		ng/g	--	--	--	--	--	--	--	--	
PCB 70	32598-11-1	TA Knoxville	EPA 1668A	NA	0.040	0.011		ng/g	--	--	--	--	--	--	--	--	
PCB 71	41464-46-4	TA Knoxville	EPA 1668A	NA	0.030	0.013		ng/g	--	--	--	--	--	--	--	--	
PCB 72	41464-42-0	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--	
PCB 73	74338-23-1	TA Knoxville	EPA 1668A	NA	0.020	0.0048		ng/g	--	--	--	--	--	--	--	--	

Table 2a. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in Targeted SMA Sediment Samples (Surface and Subsurface)

PARCCS:		Comparability		Sensitivity					Accuracy and Precision					
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits ²	Achievable Laboratory MDLs ²	Laboratory EDLs	Units	MS/MSD			LCS/LCSD		
									Percent Recovery (%)		RPD (%)	Percent Recovery (%)		RPD (%)
PCB 74	32690-93-0	TA Knoxville	EPA 1668A	NA	0.040	0.011		ng/g	--	--	--	--	--	--
PCB 75	32598-12-2	TA Knoxville	EPA 1668A	NA	0.030	0.016		ng/g	--	--	--	--	--	--
PCB 76	70362-48-0	TA Knoxville	EPA 1668A	NA	0.040	0.011		ng/g	--	--	--	--	--	--
PCB 77	32598-13-3	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	50	--	150	50	50	50
PCB 78	70362-49-1	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--
PCB 79	41464-48-6	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--
PCB 80	33284-52-5	TA Knoxville	EPA 1668A	NA	0.010	0.0022		ng/g	--	--	--	--	--	--
PCB 81	70362-50-4	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	50	--	150	50	50	50
PCB 82	52663-62-4	TA Knoxville	EPA 1668A	NA	0.010	0.0029		ng/g	--	--	--	--	--	--
PCB 83	60145-20-2	TA Knoxville	EPA 1668A	NA	0.020	0.0054		ng/g	--	--	--	--	--	--
PCB 84	52663-60-2	TA Knoxville	EPA 1668A	NA	0.010	0.0042		ng/g	--	--	--	--	--	--
PCB 85	65510-45-4	TA Knoxville	EPA 1668A	NA	0.030	0.012		ng/g	--	--	--	--	--	--
PCB 86	55312-69-1	TA Knoxville	EPA 1668A	NA	0.060	0.046		ng/g	--	--	--	--	--	--
PCB 87	38380-02-8	TA Knoxville	EPA 1668A	NA	0.060	0.046		ng/g	--	--	--	--	--	--
PCB 88	55215-17-3	TA Knoxville	EPA 1668A	NA	0.020	0.0064		ng/g	--	--	--	--	--	--
PCB 89	73575-57-2	TA Knoxville	EPA 1668A	NA	0.010	0.0030		ng/g	--	--	--	--	--	--
PCB 90	68194-07-0	TA Knoxville	EPA 1668A	NA	0.030	0.014		ng/g	--	--	--	--	--	--
PCB 91	68194-05-8	TA Knoxville	EPA 1668A	NA	0.020	0.0064		ng/g	--	--	--	--	--	--
PCB 92	52663-61-3	TA Knoxville	EPA 1668A	NA	0.010	0.0028		ng/g	--	--	--	--	--	--
PCB 93	73575-56-1	TA Knoxville	EPA 1668A	NA	0.020	0.0070		ng/g	--	--	--	--	--	--
PCB 94	73575-55-0	TA Knoxville	EPA 1668A	NA	0.010	0.0035		ng/g	--	--	--	--	--	--
PCB 95	38379-99-6	TA Knoxville	EPA 1668A	NA	0.010	0.0042		ng/g	--	--	--	--	--	--
PCB 96	73575-54-9	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--
PCB 97	41464-51-1	TA Knoxville	EPA 1668A	NA	0.060	0.046		ng/g	--	--	--	--	--	--
PCB 98	60233-25-2	TA Knoxville	EPA 1668A	NA	0.020	0.0064		ng/g	--	--	--	--	--	--
PCB 99	38380-01-7	TA Knoxville	EPA 1668A	NA	0.020	0.0054		ng/g	--	--	--	--	--	--
PCB 100	39485-83-1	TA Knoxville	EPA 1668A	NA	0.020	0.0070		ng/g	--	--	--	--	--	--
PCB 101	37680-73-2	TA Knoxville	EPA 1668A	NA	0.030	0.014		ng/g	--	--	--	--	--	--
PCB 102	68194-06-9	TA Knoxville	EPA 1668A	NA	0.020	0.0064		ng/g	--	--	--	--	--	--
PCB 103	60145-21-3	TA Knoxville	EPA 1668A	NA	0.010	0.0031		ng/g	--	--	--	--	--	--
PCB 104	56558-16-8	TA Knoxville	EPA 1668A	NA	0.010	0.0021		ng/g	50	--	150	50	50	50
PCB 105	32598-14-4	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	50	--	150	50	50	50
PCB 106	70424-69-0	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--
PCB 107	70424-68-9	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--
PCB 108	70362-41-3	TA Knoxville	EPA 1668A	NA	0.020	0.0040		ng/g	--	--	--	--	--	--
PCB 109	74472-35-8	TA Knoxville	EPA 1668A	NA	0.060	0.046		ng/g	--	--	--	--	--	--
PCB 110	38380-03-9	TA Knoxville	EPA 1668A	NA	0.020	0.0068		ng/g	--	--	--	--	--	--
PCB 111	39635-32-0	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--
PCB 112	74472-36-9	TA Knoxville	EPA 1668A	NA	0.010	0.0036		ng/g	--	--	--	--	--	--
PCB 113	68194-10-5	TA Knoxville	EPA 1668A	NA	0.030	0.014		ng/g	--	--	--	--	--	--
PCB 114	74472-37-0	TA Knoxville	EPA 1668A	NA	0.010	0.0025		ng/g	50	--	150	50	50	50
PCB 115	74472-38-1	TA Knoxville	EPA 1668A	NA	0.020	0.0068		ng/g	--	--	--	--	--	--
PCB 116	18259-05-7	TA Knoxville	EPA 1668A	NA	0.030	0.012		ng/g	--	--	--	--	--	--
PCB 117	68194-11-6	TA Knoxville	EPA 1668A	NA	0.030	0.012		ng/g	--	--	--	--	--	--
PCB 118	31508-00-6	TA Knoxville	EPA 1668A	NA	0.010	0.0022		ng/g	50	--	150	50	50	50
PCB 119	56558-17-9	TA Knoxville	EPA 1668A	NA	0.060	0.046		ng/g	--	--	--	--	--	--
PCB 120	68194-12-7	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--

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PARCCS:		Comparability		Sensitivity					Accuracy and Precision							
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits ²	Achievable Laboratory MDLs ²	Laboratory EDLs	Units	MS/MSD				LCS/LCSD			
									Percent Recovery (%)		RPD (%)		Percent Recovery (%)		RPD (%)	
PCB 121	56558-18-0	TA Knoxville	EPA 1668A	NA	0.010	0.0023		ng/g	--	--	--	--	--	--	--	--
PCB 122	76842-07-4	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 123	65510-44-3	TA Knoxville	EPA 1668A	NA	0.010	0.0024		ng/g	50	--	150	50	50	--	150	50
PCB 124	70424-70-3	TA Knoxville	EPA 1668A	NA	0.020	0.0040		ng/g	--	--	--	--	--	--	--	--
PCB 125	74472-39-2	TA Knoxville	EPA 1668A	NA	0.060	0.046		ng/g	--	--	--	--	--	--	--	--
PCB 126	57465-28-8	TA Knoxville	EPA 1668A	NA	0.010	0.0027		ng/g	50	--	150	50	50	--	150	50
PCB 127	39635-33-1	TA Knoxville	EPA 1668A	NA	0.010	0.0023		ng/g	--	--	--	--	--	--	--	--
PCB 128	38380-07-3	TA Knoxville	EPA 1668A	NA	0.020	0.010		ng/g	--	--	--	--	--	--	--	--
PCB 129	55215-18-4	TA Knoxville	EPA 1668A	NA	0.040	0.023		ng/g	--	--	--	--	--	--	--	--
PCB 130	52663-66-8	TA Knoxville	EPA 1668A	NA	0.010	0.0023		ng/g	--	--	--	--	--	--	--	--
PCB 131	61798-70-7	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 132	38380-05-1	TA Knoxville	EPA 1668A	NA	0.010	0.0024		ng/g	--	--	--	--	--	--	--	--
PCB 133	35694-04-3	TA Knoxville	EPA 1668A	NA	0.010	0.0030		ng/g	--	--	--	--	--	--	--	--
PCB 134	52704-70-8	TA Knoxville	EPA 1668A	NA	0.020	0.0086		ng/g	--	--	--	--	--	--	--	--
PCB 135	52744-13-5	TA Knoxville	EPA 1668A	NA	0.020	0.0074		ng/g	--	--	--	--	--	--	--	--
PCB 136	38411-22-2	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 137	35694-06-5	TA Knoxville	EPA 1668A	NA	0.010	0.0036		ng/g	--	--	--	--	--	--	--	--
PCB 138	35065-28-2	TA Knoxville	EPA 1668A	NA	0.040	0.023		ng/g	--	--	--	--	--	--	--	--
PCB 139	56030-56-9	TA Knoxville	EPA 1668A	NA	0.020	0.0060		ng/g	--	--	--	--	--	--	--	--
PCB 140	59291-64-4	TA Knoxville	EPA 1668A	NA	0.020	0.0060		ng/g	--	--	--	--	--	--	--	--
PCB 141	52712-04-6	TA Knoxville	EPA 1668A	NA	0.010	0.0035		ng/g	--	--	--	--	--	--	--	--
PCB 142	41411-61-4	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 143	68194-15-0	TA Knoxville	EPA 1668A	NA	0.020	0.0086		ng/g	--	--	--	--	--	--	--	--
PCB 144	68194-14-9	TA Knoxville	EPA 1668A	NA	0.010	0.0034		ng/g	--	--	--	--	--	--	--	--
PCB 145	74472-40-5	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 146	51908-16-8	TA Knoxville	EPA 1668A	NA	0.010	0.0040		ng/g	--	--	--	--	--	--	--	--
PCB 147	68194-13-8	TA Knoxville	EPA 1668A	NA	0.020	0.0048		ng/g	--	--	--	--	--	--	--	--
PCB 148	74472-41-6	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 149	38380-04-0	TA Knoxville	EPA 1668A	NA	0.020	0.0048		ng/g	--	--	--	--	--	--	--	--
PCB 150	68194-08-1	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 151	52663-63-5	TA Knoxville	EPA 1668A	NA	0.020	0.0074		ng/g	--	--	--	--	--	--	--	--
PCB 152	68194-09-2	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 153	35065-27-1	TA Knoxville	EPA 1668A	NA	0.020	0.0036		ng/g	--	--	--	--	--	--	--	--
PCB 154	60145-22-4	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 155	33979-03-2	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	50	--	150	50	50	--	150	50
PCB 156	38380-08-4	TA Knoxville	EPA 1668A	NA	0.020	0.0048		ng/g	50	--	150	50	50	--	150	50
PCB 157	69782-90-7	TA Knoxville	EPA 1668A	NA	0.020	0.0048		ng/g	50	--	150	50	50	--	150	50
PCB 158	74472-42-7	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 159	39635-35-3	TA Knoxville	EPA 1668A	NA	0.010	0.0022		ng/g	--	--	--	--	--	--	--	--
PCB 160	41411-62-5	TA Knoxville	EPA 1668A	NA	0.040	0.0230		ng/g	--	--	--	--	--	--	--	--
PCB 161	74472-43-8	TA Knoxville	EPA 1668A	NA	0.010	0.0028		ng/g	--	--	--	--	--	--	--	--
PCB 162	39635-34-2	TA Knoxville	EPA 1668A	NA	0.010	0.0022		ng/g	--	--	--	--	--	--	--	--
PCB 163	74472-44-9	TA Knoxville	EPA 1668A	NA	0.040	0.023		ng/g	--	--	--	--	--	--	--	--
PCB 164	74472-45-0	TA Knoxville	EPA 1668A	NA	0.010	0.0036		ng/g	--	--	--	--	--	--	--	--

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PARCCS:		Comparability		Sensitivity					Accuracy and Precision							
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits ²	Achievable Laboratory MDLs ²	Laboratory EDLs	Units	MS/MSD				LCS/LCSD			
									Percent Recovery (%)		RPD (%)		Percent Recovery (%)		RPD (%)	
PCB 165	74472-46-1	TA Knoxville	EPA 1668A	NA	0.010	0.0024		ng/g	--	--	--	--	--	--	--	--
PCB 166	41411-63-6	TA Knoxville	EPA 1668A	NA	0.020	0.010		ng/g	--	--	--	--	--	--	--	--
PCB 167	52663-72-6	TA Knoxville	EPA 1668A	NA	0.010	0.0025		ng/g	50	--	150	50	50	--	150	50
PCB 168	59291-65-5	TA Knoxville	EPA 1668A	NA	0.020	0.0036		ng/g	--	--	--	--	--	--	--	--
PCB 169	32774-16-6	TA Knoxville	EPA 1668A	NA	0.010	0.0023		ng/g	50	--	150	50	50	--	150	50
PCB 170	35065-30-6	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 171	52663-71-5	TA Knoxville	EPA 1668A	NA	0.020	0.0086		ng/g	--	--	--	--	--	--	--	--
PCB 172	52663-74-8	TA Knoxville	EPA 1668A	NA	0.010	0.0030		ng/g	--	--	--	--	--	--	--	--
PCB 173	68194-16-1	TA Knoxville	EPA 1668A	NA	0.020	0.0086		ng/g	--	--	--	--	--	--	--	--
PCB 174	38411-25-5	TA Knoxville	EPA 1668A	NA	0.010	0.0029		ng/g	--	--	--	--	--	--	--	--
PCB 175	40186-70-7	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 176	52663-65-7	TA Knoxville	EPA 1668A	NA	0.010	0.0021		ng/g	--	--	--	--	--	--	--	--
PCB 177	52663-70-4	TA Knoxville	EPA 1668A	NA	0.010	0.0021		ng/g	--	--	--	--	--	--	--	--
PCB 178	52663-67-9	TA Knoxville	EPA 1668A	NA	0.010	0.0024		ng/g	--	--	--	--	--	--	--	--
PCB 179	52663-64-6	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 180	35065-29-3	TA Knoxville	EPA 1668A	NA	0.020	0.0074		ng/g	--	--	--	--	--	--	--	--
PCB 181	74472-47-2	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 182	60145-23-5	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 183	52663-69-1	TA Knoxville	EPA 1668A	NA	0.020	0.0052		ng/g	--	--	--	--	--	--	--	--
PCB 184	74472-48-3	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 185	52712-05-7	TA Knoxville	EPA 1668A	NA	0.020	0.0052		ng/g	--	--	--	--	--	--	--	--
PCB 186	74472-49-4	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 187	52663-68-0	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 188	74487-85-7	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	50	--	150	50	50	--	150	50
PCB 189	39635-31-9	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	50	--	150	50	50	--	150	50
PCB 190	41411-64-7	TA Knoxville	EPA 1668A	NA	0.010	0.0026		ng/g	--	--	--	--	--	--	--	--
PCB 191	74472-50-7	TA Knoxville	EPA 1668A	NA	0.010	0.0024		ng/g	--	--	--	--	--	--	--	--
PCB 192	74472-51-8	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 193	69782-91-8	TA Knoxville	EPA 1668A	NA	0.020	0.0074		ng/g	--	--	--	--	--	--	--	--
PCB 194	35694-08-7	TA Knoxville	EPA 1668A	NA	0.010	0.0026		ng/g	--	--	--	--	--	--	--	--
PCB 195	52663-78-2	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 196	42740-50-1	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 197	33091-17-7	TA Knoxville	EPA 1668A	NA	0.010	0.0029		ng/g	--	--	--	--	--	--	--	--
PCB 198	68194-17-2	TA Knoxville	EPA 1668A	NA	0.020	0.0074		ng/g	--	--	--	--	--	--	--	--
PCB 199	52663-75-9	TA Knoxville	EPA 1668A	NA	0.020	0.0074		ng/g	--	--	--	--	--	--	--	--
PCB 200	52663-73-7	TA Knoxville	EPA 1668A	NA	0.010	0.0029		ng/g	--	--	--	--	--	--	--	--
PCB 201	40186-71-8	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 202	2136-99-4	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	50	--	150	50	50	--	150	50
PCB 203	52663-76-0	TA Knoxville	EPA 1668A	NA	0.010	0.0025		ng/g	--	--	--	--	--	--	--	--
PCB 204	74472-52-9	TA Knoxville	EPA 1668A	NA	0.010	0.0026		ng/g	--	--	--	--	--	--	--	--
PCB 205	74472-53-0	TA Knoxville	EPA 1668A	NA	0.010	0.0021		ng/g	50	--	150	50	50	--	150	50
PCB 206	40186-72-9	TA Knoxville	EPA 1668A	NA	0.010	0.0029		ng/g	50	--	150	50	50	--	150	50
PCB 207	52663-79-3	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 208	52663-77-1	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	50	--	150	50	50	--	150	50
PCB 209	2051-24-3	TA Knoxville	EPA 1668A	NA	0.010	0.0021		ng/g	50	--	150	50	50	--	150	50

Table 2a. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in Targeted SMA Sediment Samples (Surface and Subsurface)

PARCCS:	Comparability			Sensitivity					Accuracy and Precision							
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits ²	Achievable Laboratory MDLs ²	Laboratory EDLs	Units	MS/MSD				LCS/LCSD			
									Percent Recovery (%)		RPD (%)	Percent Recovery (%)		RPD (%)		
Conventionals																
Total Organic Carbon	7440-44-0	TA Seattle	EPA 9060	NA	2000	44.4		mg/kg	68	--	149	32	68	--	149	32
Total Solids	NA	ALS Kelso/TA	EPA 160.3M	NA	NA	NA		NA	--	--	--	20	--	--	--	20
Subsurface Sediment																
Chlorinated Pesticides																
Aldrin	309-00-2	ALS Kelso	EPA GC/MS/MS 1699M	2	0.1	0.079		µg/kg	52	--	151	30	74	--	122	30
Chlordanes (alpha, gamma, technical)	57-74-9	ALS Kelso	EPA GC/MS/MS 1699M	1.4	0.1	0.062		µg/kg	31	--	156	30	74	--	130	30
DDx	--	ALS Kelso	EPA GC/MS/MS 1699M	6.1	0.1	--		µg/kg	--	--	--	--	--	--	--	--
DDD ³	--	ALS Kelso	EPA GC/MS/MS 1699M	114	0.1	0.06		µg/kg	10	--	190	30	74	--	117	30
DDE ³	--	ALS Kelso	EPA GC/MS/MS 1699M	226	0.1	0.07		µg/kg	43	--	155	30	54	--	145	30
DDT ³	--	ALS Kelso	EPA GC/MS/MS 1699M	246	0.1	0.09		µg/kg	24	--	183	30	78	--	116	30
Dieldrin	60-57-1	ALS Kelso	EPA GC/MS/MS 1699M	0.07	0.2	0.01		µg/kg	28	--	150	30	62	--	131	30
Lindane	58-89-9	ALS Kelso	EPA GC/MS/MS 1699M	5	0.1	0.031		µg/kg	64	--	135	30	79	--	116	30
Dioxins/Furans ⁴																
Dioxins/Furans (2,3,7,8 TCDD eq)	--	TA Sacramento	EPA 1613B	NA	NA	NA		NA	--	--	--	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1746-01-6	TA Sacramento	EPA 1613B	0.20	1.0	0.15	0.028	pg/g	--	--	--	--	67	--	158	--
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	40321-76-4	TA Sacramento	EPA 1613B	0.20	5.0	0.300	0.030	pg/g	--	--	--	--	70	--	142	--
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	39227-28-6	TA Sacramento	EPA 1613B	NA	5.0	0.71	0.025	pg/g	--	--	--	--	70	--	164	--
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	57653-85-7	TA Sacramento	EPA 1613B	NA	5.0	0.58	0.025	pg/g	--	--	--	--	76	--	134	--
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	19408-74-3	TA Sacramento	EPA 1613B	NA	5.0	0.58	0.022	pg/g	--	--	--	--	64	--	162	--
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	35822-46-9	TA Sacramento	EPA 1613B	NA	5.0	0.46	0.038	pg/g	--	--	--	--	70	--	140	--
1,2,3,4,5,6,7,8-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9	TA Sacramento	EPA 1613B	NA	10.0	1.5	0.053	pg/g	--	--	--	--	78	--	144	--
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	51207-31-9	TA Sacramento	EPA 1613B	0.407	1.0	0.11	0.015	pg/g	--	--	--	--	75	--	158	--
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	57117-41-6	TA Sacramento	EPA 1613B	NA	5.0	0.27	0.018	pg/g	--	--	--	--	80	--	134	--
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	57117-31-4	TA Sacramento	EPA 1613B	0.30	5.0	0.29	0.019	pg/g	--	--	--	--	68	--	160	--
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	70648-26-9	TA Sacramento	EPA 1613B	0.40	5.0	0.3	0.023	pg/g	--	--	--	--	72	--	134	--
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	57117-44-9	TA Sacramento	EPA 1613B	NA	5.0	0.38	0.021	pg/g	--	--	--	--	84	--	130	--
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	72918-21-9	TA Sacramento	EPA 1613B	NA	5.0	0.43	0.017	pg/g	--	--	--	--	78	--	130	--
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	60851-34-5	TA Sacramento	EPA 1613B	NA	5.0	0.3	0.017	pg/g	--	--	--	--	70	--	156	--
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	67562-39-4	TA Sacramento	EPA 1613B	NA	5.0	0.38	0.043	pg/g	--	--	--	--	82	--	122	--
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	55673-89-7	TA Sacramento	EPA 1613B	NA	5.0	0.65	0.059	pg/g	--	--	--	--	78	--	138	--
1,2,3,4,5,6,7,8-Octachlorodibenzofuran (OCDF)	39001-02-0	TA Sacramento	EPA 1613B	NA	10.0	1.2	0.032	pg/g	--	--	--	--	63	--	170	--
Grain Size																
Clay	STL00587	TA Seattle	ASTM D7928 and D6913	NA	0.010	NA		%	--	--	--	--	--	--	--	--
Coarse Sand	STL00583	TA Seattle	ASTM D7928 and D6913	NA	0.010	NA		%	--	--	--	--	--	--	--	--
Fine Sand	STL00585	TA Seattle	ASTM D7928 and D6913	NA	0.010	NA		%	--	--	--	--	--	--	--	--
Gravel	STL00581	TA Seattle	ASTM D7928 and D6913	NA	0.010	NA		%	--	--	--	--	--	--	--	--
Medium Sand	STL00584	TA Seattle	ASTM D7928 and D6913	NA	0.010	NA		%	--	--	--	--	--	--	--	--
Silt	STL00586	TA Seattle	ASTM D7928 and D6913	NA	0.010	NA		%	--	--	--	--	--	--	--	--

Table 2a. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in Targeted SMA Sediment Samples (Surface and Subsurface)

PARCCS:	Comparability			Sensitivity					Accuracy and Precision						
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits ²	Achievable Laboratory MDLs ²	Laboratory EDLs	Units	MS/MSD			LCS/LCSD			
									Percent Recovery (%)		RPD (%)	Percent Recovery (%)		RPD (%)	
Atterberg Limits															
Atterberg Limits	--	TA Burlington	ASTM D4318	NA	--	NA		%	--	--	--	--	--	--	--
PAHs															
PAHs	--	ALS Kelso	EPA 8270D-SIM	23000	NA	NA		µg/kg	--	--	--	--	--	--	--
cPAHs (BaP equivalent)	--	ALS Kelso	EPA 8270D-SIM	12	NA	NA		µg/kg	--	--	--	--	--	--	--
Acenaphthene	83-32-9	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.032		µg/kg	51	--	82	40	70	--	130
Acenaphthylene	208-96-8	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.029		µg/kg	51	--	80	40	70	--	130
Anthracene	120-12-7	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.026		µg/kg	56	--	87	40	70	--	130
Benzo(a)anthracene	56-55-3	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.033		µg/kg	65	--	97	40	70	--	130
Benzo(a)pyrene	50-32-8	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.036		µg/kg	64	--	103	40	70	--	130
Benzo(b)fluoranthene	205-99-2	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.057		µg/kg	63	--	99	40	70	--	130
Benzo(g,h,i)perylene	191-24-2	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.059		µg/kg	56	--	101	40	70	--	130
Benzo(k)fluoranthene	207-08-9	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.045		µg/kg	62	--	99	40	70	--	130
Chrysene	218-01-9	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.027		µg/kg	63	--	100	40	70	--	130
Dibenz(a,h)anthracene	53-70-3	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.058		µg/kg	56	--	104	40	70	--	130
Fluoranthene	206-44-0	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.032		µg/kg	45	--	96	40	70	--	130
Fluorene	86-73-7	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.039		µg/kg	52	--	83	40	70	--	130
Indeno(1,2,3-cd)pyrene	193-39-5	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.064		µg/kg	61	--	105	40	70	--	130
2-Methylnaphthalene	91-57-6	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.047		µg/kg	52	--	85	40	70	--	130
Naphthalene	91-20-3	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.089		µg/kg	48	--	77	40	70	--	130
Phenanthrene	85-01-8	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.033		µg/kg	48	--	85	40	70	--	130
Pyrene	129-00-0	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.032		µg/kg	59	--	98	40	70	--	130
PCB Aroclors															
Total PCBs	--	TA Seattle	EPA 8082A LL	9	--	--		µg/kg	--	--	--	--	--	--	--
PCB-1016	12674-11-2	TA Seattle	EPA 8082A LL	NA	1.0	0.050		µg/kg	69	--	126	17	69	--	126
PCB-1221	11104-28-2	TA Seattle	EPA 8082A LL	NA	1.1	0.34		µg/kg	--	--	--	--	--	--	--
PCB-1232	11141-16-5	TA Seattle	EPA 8082A LL	NA	1.1	0.22		µg/kg	--	--	--	--	--	--	--
PCB-1242	53469-21-9	TA Seattle	EPA 8082A LL	NA	1.0	0.21		µg/kg	--	--	--	--	--	--	--
PCB-1248	12672-29-6	TA Seattle	EPA 8082A LL	NA	1.1	0.16		µg/kg	--	--	--	--	--	--	--
PCB-1254	11097-69-1	TA Seattle	EPA 8082A LL	NA	1.0	0.090		µg/kg	--	--	--	--	--	--	--
PCB-1260	11096-82-5	TA Seattle	EPA 8082A LL	NA	1.0	0.13		µg/kg	68	--	136	21	68	--	136
Conventionals															
Total Organic Carbon	7440-44-0	TA Seattle	EPA 9060	NA	2000	44.4		mg/kg	68	--	149	32	68	--	149
Total Solids	NA	ALS Kelso/TA	EPA 160.3M	NA	NA	NA		NA	--	--	--	20	--	--	20

Notes:

¹ From Table 17 of the ROD.

² Project action limits and laboratory MDLs are reported on a dry weight basis.

³ The laboratory will analyze for both the 2,4 and 4,4 DDD, DDE and DDT isomers.

⁴ Samples will be reported to sample-specific EDLs. Method 1668 also reports to sample specific EMLs.

Accuracy and precision values, as well as MDLs, provided by the laboratory. These are presented for informational purposes only. Data review/validation will be based on the most current control limits in effect at the time of analysis.

Abbreviations:

-- = not provided

µg/kg = micrograms per kilogram

ASTM = American Society for Testing and Materials

BaP = benzo(a)pyrene

BEHP = bis-(2-ethylhexyl)phthalate

CAS = Chemical Abstract Service

cPAH = carcinogenic polycyclic aromatic hydrocarbon

DDx = dichlorodiphenyltrichloroethane and its derivatives

EDL = Estimated detection limit

EML = Estimated minimum level

EPA = Environmental Protection Agency

LCS = Laboratory Control Sample

LCSD = Laboratory Control Sample Duplicate

MDL = Method Detection Limit

mg/kg = milligrams per kilogram

MS = Matrix Sp ke

MSD = Matrix Spike Duplicate

NA = not applicable

ng/g = nanograms per gram

PAH = polycyclic aromatic hydrocarbons

PARCCS = Precision, Accuracy, Representativeness, Completeness, Comparability and Sensitivity

PCB = polychlorinated biphenyl

pg/g = picograms per gram

RI = remedial investigation

ROD = Record of Decision

RPD = Relative Percent Difference

SIM = Selective Ion Monitoring

SMA = sediment management area

TA = TestAmerica

TOC = total organic carbon

Table 2b. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in Stratified Random Surface Sediment and Suspended Sediment Samples

PARCCS:		Comparability			Sensitivity					Accuracy and Precision							
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits ²	Achievable Laboratory MDLs ²	Laboratory EDLs	Units	MS/MSD				LCS/LCSD				
									Percent Recovery (%)		RPD (%)	Percent Recovery (%)		RPD (%)			
Semi Volatile Organic Compounds (SVOCs)																	
bis-(2-ethylhexyl) phthalate (BEHP)	117-81-7	ALS Kelso	EPA 8270D-LL	135	100	8.9		µg/kg	23	--	123	40	39	--	113	40	
Chlorinated Pesticides																	
Aldrin	309-00-2	ALS Kelso	EPA GC/MS/MS 1699M	2	0.1	0.079		µg/kg	52	--	151	30	74	--	122	30	
Chlordanes (alpha, gamma, technical)	57-74-9	ALS Kelso	EPA GC/MS/MS 1699M	1.4	0.1	0.062		µg/kg	31	--	156	30	74	--	130	30	
DDx	--	ALS Kelso	EPA GC/MS/MS 1699M	6.1	0.1	-		µg/kg	--	--	--	30	--	--	--	30	
DDD ³	--	ALS Kelso	EPA GC/MS/MS 1699M	114	0.1	0.06		µg/kg	10	--	190	30	74	--	117	30	
DDE ³	--	ALS Kelso	EPA GC/MS/MS 1699M	226	0.1	0.07		µg/kg	43	--	155	30	54	--	145	30	
DDT ³	--	ALS Kelso	EPA GC/MS/MS 1699M	246	0.1	0.09		µg/kg	24	--	183	30	78	--	116	30	
Dieldrin	60-57-1	ALS Kelso	EPA GC/MS/MS 1699M	0.07	0.2	0.01		µg/kg	28	--	150	30	62	--	131	30	
Lindane	58-89-9	ALS Kelso	EPA GC/MS/MS 1699M	5	0.1	0.031		µg/kg	64	--	135	30	79	--	116	30	
Dioxins/Furans ⁴																	
Dioxins/Furans (2,3,7,8-TCDD eq)	--	TA Sacramento	EPA 1613B	NA	NA	NA	NA	NA	--	--	--	--	--	--	--	--	
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1746-01-6	TA Sacramento	EPA 1613B	0.20	1	0.15	0.028	pg/g	--	--	--	--	67	--	158	--	
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	40321-76-4	TA Sacramento	EPA 1613B	0.20	5	0.300	0.030	pg/g	--	--	--	--	70	--	142	--	
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	39227-28-6	TA Sacramento	EPA 1613B	NA	5	0.71	0.025	pg/g	--	--	--	--	70	--	164	--	
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	57653-85-7	TA Sacramento	EPA 1613B	NA	5	0.58	0.025	pg/g	--	--	--	--	76	--	134	--	
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	19408-74-3	TA Sacramento	EPA 1613B	NA	5	0.58	0.022	pg/g	--	--	--	--	64	--	162	--	
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	35822-46-9	TA Sacramento	EPA 1613B	NA	5	0.46	0.038	pg/g	--	--	--	--	70	--	140	--	
1,2,3,4,5,6,7,8-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9	TA Sacramento	EPA 1613B	NA	10	1.5	0.053	pg/g	--	--	--	--	78	--	144	--	
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	51207-31-9	TA Sacramento	EPA 1613B	0.407	1	0.11	0.015	pg/g	--	--	--	--	75	--	158	--	
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	57117-41-6	TA Sacramento	EPA 1613B	NA	5	0.27	0.018	pg/g	--	--	--	--	80	--	134	--	
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	57117-31-4	TA Sacramento	EPA 1613B	0.30	5	0.29	0.019	pg/g	--	--	--	--	68	--	160	--	
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	70648-26-9	TA Sacramento	EPA 1613B	0.40	5	0.3	0.023	pg/g	--	--	--	--	72	--	134	--	
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	57117-44-9	TA Sacramento	EPA 1613B	NA	5	0.38	0.021	pg/g	--	--	--	--	84	--	130	--	
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	72918-21-9	TA Sacramento	EPA 1613B	NA	5	0.43	0.017	pg/g	--	--	--	--	78	--	130	--	
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	60851-34-5	TA Sacramento	EPA 1613B	NA	5	0.3	0.017	pg/g	--	--	--	--	70	--	156	--	
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	67562-39-4	TA Sacramento	EPA 1613B	NA	5	0.38	0.043	pg/g	--	--	--	--	82	--	122	--	
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	55673-89-7	TA Sacramento	EPA 1613B	NA	5	0.65	0.059	pg/g	--	--	--	--	78	--	138	--	
1,2,3,4,5,6,7,8-Octachlorodibenzofuran (OCDF)	39001-02-0	TA Sacramento	EPA 1613B	NA	10	1.2	0.032	pg/g	--	--	--	--	63	--	170	--	
Grain Size																	
Clay	STL00587	TA Seattle	ASTM D7928 and D6913	NA	0.010	NA		%	--	--	--	--	--	--	--	--	
Coarse Sand	STL00583	TA Seattle	ASTM D7928 and D6913	NA	0.010	NA		%	--	--	--	--	--	--	--	--	
Fine Sand	STL00585	TA Seattle	ASTM D7928 and D6913	NA	0.010	NA		%	--	--	--	--	--	--	--	--	
Gravel	STL00581	TA Seattle	ASTM D7928 and D6913	NA	0.010	NA		%	--	--	--	--	--	--	--	--	
Medium Sand	STL00584	TA Seattle	ASTM D7928 and D6913	NA	0.010	NA		%	--	--	--	--	--	--	--	--	
Silt	STL00586	TA Seattle	ASTM D7928 and D6913	NA	0.010	NA		%	--	--	--	--	--	--	--	--	
Metals																	
Arsenic	7440-38-2	TA Seattle	EPA 6020B	3	0.50	0.10		mg/kg	80	--	120	20	80	--	120	20	
Cadmium	7440-43-9	TA Seattle	EPA 6020B	0.51	0.40	0.077		mg/kg	80	--	120	20	80	--	120	20	
Copper	7440-50-8	TA Seattle	EPA 6020B	359	1.0	0.22		mg/kg	80	--	120	20	80	--	120	20	
Lead	7439-92-1	TA Seattle	EPA 6020B	196	0.50	0.048		mg/kg	80	--	120	20	80	--	120	20	
Zinc	7440-66-6	TA Seattle	EPA 6020B	459	5.0	1.61		mg/kg	80	--	120	20	80	--	120	20	
Mercury	7439-97-6	TA Seattle	EPA 7471A	0.085	0.030	0.0090		mg/kg	80	--	120	20	80	--	120	20	

Table 2b. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in Stratified Random Surface Sediment and Suspended Sediment Samples

PARCCS:		Comparability			Sensitivity				Accuracy and Precision							
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits ²	Achievable Laboratory MDLs ²	Laboratory EDLs	Units	MS/MSD				LCS/LCSD			
									Percent Recovery (%)		RPD (%)	Percent Recovery (%)		RPD (%)		
PAHs																
PAHs	NA	ALS Kelso	EPA 8270D-SIM	23000	NA	NA		µg/kg	--	--	--	--	--	--	--	--
cPAHs (BaP equivalent)	NA	ALS Kelso	EPA 8270D-SIM	12	NA	NA		µg/kg	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.032		µg/kg	51	--	82	40	70	--	130	40
Acenaphthylene	208-96-8	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.029		µg/kg	51	--	80	40	70	--	130	40
Anthracene	120-12-7	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.026		µg/kg	56	--	87	40	70	--	130	40
Benzo(a)anthracene	56-55-3	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.033		µg/kg	65	--	97	40	70	--	130	40
Benzo(a)pyrene	50-32-8	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.036		µg/kg	64	--	103	40	70	--	130	40
Benzo(b)fluoranthene	205-99-2	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.057		µg/kg	63	--	99	40	70	--	130	40
Benzo(g,h,i)perylene	191-24-2	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.059		µg/kg	56	--	101	40	70	--	130	40
Benzo(k)fluoranthene	207-08-9	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.045		µg/kg	62	--	99	40	70	--	130	40
Chrysene	218-01-9	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.027		µg/kg	63	--	100	40	70	--	130	40
Dibenz(a,h)anthracene	53-70-3	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.058		µg/kg	56	--	104	40	70	--	130	40
Fluoranthene	206-44-0	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.032		µg/kg	45	--	96	40	70	--	130	40
Fluorene	86-73-7	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.039		µg/kg	52	--	83	40	70	--	130	40
Indeno(1,2,3-cd)pyrene	193-39-5	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.064		µg/kg	61	--	105	40	70	--	130	40
2-Methylnaphthalene	91-57-6	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.047		µg/kg	52	--	85	40	70	--	130	40
Naphthalene	91-20-3	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.089		µg/kg	48	--	77	40	70	--	130	40
Phenanthrene	85-01-8	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.033		µg/kg	48	--	85	40	70	--	130	40
Pyrene	129-00-0	ALS Kelso	EPA 8270D-SIM	NA	0.5	0.032		µg/kg	59	--	98	40	70	--	130	40
PCB Congeners ⁴																
Total PCBs	--	TA Knoxville	EPA 1668A	9	NA	NA		ng/g	--	--	--	--	--	--	--	--
PCB 1	2051-60-7	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	50	--	150	50	50	--	150	50
PCB 2	2051-61-8	TA Knoxville	EPA 1668A	NA	0.010	0.0023		ng/g	--	--	--	--	--	--	--	--
PCB 3	2051-62-9	TA Knoxville	EPA 1668A	NA	0.010	0.0021		ng/g	50	--	150	50	50	--	150	50
PCB 4	13029-08-8	TA Knoxville	EPA 1668A	NA	0.020	0.0035		ng/g	50	--	150	50	50	--	150	50
PCB 5	16605-91-7	TA Knoxville	EPA 1668A	NA	0.010	0.0026		ng/g	--	--	--	--	--	--	--	--
PCB 6	25569-80-6	TA Knoxville	EPA 1668A	NA	0.010	0.0022		ng/g	--	--	--	--	--	--	--	--
PCB 7	33284-50-3	TA Knoxville	EPA 1668A	NA	0.010	0.0038		ng/g	--	--	--	--	--	--	--	--
PCB 8	34883-43-7	TA Knoxville	EPA 1668A	NA	0.020	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 9	34883-39-1	TA Knoxville	EPA 1668A	NA	0.010	0.0037		ng/g	--	--	--	--	--	--	--	--
PCB 10	33146-45-1	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 11	2050-67-1	TA Knoxville	EPA 1668A	NA	0.020	0.0090		ng/g	--	--	--	--	--	--	--	--
PCB 12	2974-92-7	TA Knoxville	EPA 1668A	NA	0.020	0.012		ng/g	--	--	--	--	--	--	--	--
PCB 13	2974-90-5	TA Knoxville	EPA 1668A	NA	0.020	0.012		ng/g	--	--	--	--	--	--	--	--
PCB 14	34883-41-5	TA Knoxville	EPA 1668A	NA	0.010	0.0035		ng/g	--	--	--	--	--	--	--	--
PCB 15	2050-68-2	TA Knoxville	EPA 1668A	NA	0.010	0.0048		ng/g	50	--	150	50	50	--	150	50
PCB 16	38444-78-9	TA Knoxville	EPA 1668A	NA	0.010	0.0072		ng/g	--	--	--	--	--	--	--	--
PCB 17	37680-66-3	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 18	37680-65-2	TA Knoxville	EPA 1668A	NA	0.020	0.014		ng/g	--	--	--	--	--	--	--	--
PCB 19	38444-73-4	TA Knoxville	EPA 1668A	NA	0.010	0.0021		ng/g	50	--	150	50	50	--	150	50
PCB 20	38444-84-7	TA Knoxville	EPA 1668A	NA	0.020	0.0056		ng/g	--	--	--	--	--	--	--	--
PCB 21	55702-46-0	TA Knoxville	EPA 1668A	NA	0.020	0.0066		ng/g	--	--	--	--	--	--	--	--
PCB 22	38444-85-8	TA Knoxville	EPA 1668A	NA	0.010	0.0023		ng/g	--	--	--	--	--	--	--	--
PCB 23	55720-44-0	TA Knoxville	EPA 1668A	NA	0.010	0.0021		ng/g	--	--	--	--	--	--	--	--
PCB 24	55702-45-9	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 25	55712-37-3	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 26	38444-81-4	TA Knoxville	EPA 1668A	NA	0.020	0.0046		ng/g	--	--	--	--	--	--	--	--
PCB 27	38444-76-7	TA Knoxville	EPA 1668A	NA	0.010	0.0021		ng/g	--	--	--	--	--	--	--	--

Table 2b. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in Stratified Random Surface Sediment and Suspended Sediment Samples

PARCCS:		Comparability		Sensitivity					Accuracy and Precision							
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits ²	Achievable Laboratory MDLs ²	Laboratory EDLs	Units	MS/MSD				LCS/LCSD			
									Percent Recovery (%)		RPD (%)		Percent Recovery (%)		RPD (%)	
PCB 28	7012-37-5	TA Knoxville	EPA 1668A	NA	0.020	0.0056		ng/g	--	--	--	--	--	--	--	--
PCB 29	15862-07-4	TA Knoxville	EPA 1668A	NA	0.020	0.0046		ng/g	--	--	--	--	--	--	--	--
PCB 30	35693-92-6	TA Knoxville	EPA 1668A	NA	0.020	0.014		ng/g	--	--	--	--	--	--	--	--
PCB 31	16606-02-3	TA Knoxville	EPA 1668A	NA	0.020	0.0022		ng/g	--	--	--	--	--	--	--	--
PCB 32	38444-77-8	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 33	38444-86-9	TA Knoxville	EPA 1668A	NA	0.020	0.0066		ng/g	--	--	--	--	--	--	--	--
PCB 34	37680-68-5	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 35	37680-69-6	TA Knoxville	EPA 1668A	NA	0.010	0.0027		ng/g	--	--	--	--	--	--	--	--
PCB 36	38444-87-0	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 37	38444-90-5	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	50	--	150	50	50	--	150	50
PCB 38	53555-66-1	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 39	38444-88-1	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 40	38444-93-8	TA Knoxville	EPA 1668A	NA	0.030	0.013		ng/g	--	--	--	--	--	--	--	--
PCB 41	52663-59-9	TA Knoxville	EPA 1668A	NA	0.030	0.013		ng/g	--	--	--	--	--	--	--	--
PCB 42	36559-22-5	TA Knoxville	EPA 1668A	NA	0.010	0.0033		ng/g	--	--	--	--	--	--	--	--
PCB 43	70362-46-8	TA Knoxville	EPA 1668A	NA	0.020	0.0048		ng/g	--	--	--	--	--	--	--	--
PCB 44	41464-39-5	TA Knoxville	EPA 1668A	NA	0.030	0.015		ng/g	--	--	--	--	--	--	--	--
PCB 45	70362-45-7	TA Knoxville	EPA 1668A	NA	0.020	0.010		ng/g	--	--	--	--	--	--	--	--
PCB 46	41464-47-5	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 47	2437-79-8	TA Knoxville	EPA 1668A	NA	0.030	0.015		ng/g	--	--	--	--	--	--	--	--
PCB 48	70362-47-9	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 49	41464-40-8	TA Knoxville	EPA 1668A	NA	0.020	0.0054		ng/g	--	--	--	--	--	--	--	--
PCB 50	62796-65-0	TA Knoxville	EPA 1668A	NA	0.020	0.0060		ng/g	--	--	--	--	--	--	--	--
PCB 51	68194-04-7	TA Knoxville	EPA 1668A	NA	0.020	0.010		ng/g	--	--	--	--	--	--	--	--
PCB 52	35693-99-3	TA Knoxville	EPA 1668A	NA	0.010	0.0029		ng/g	--	--	--	--	--	--	--	--
PCB 53	41464-41-9	TA Knoxville	EPA 1668A	NA	0.020	0.0060		ng/g	--	--	--	--	--	--	--	--
PCB 54	15968-05-5	TA Knoxville	EPA 1668A	NA	0.010	0.0023		ng/g	50	--	150	50	50	--	150	50
PCB 55	74338-24-2	TA Knoxville	EPA 1668A	NA	0.010	0.0026		ng/g	--	--	--	--	--	--	--	--
PCB 56	41464-43-1	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 57	70424-67-8	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 58	41464-49-7	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 59	74472-33-6	TA Knoxville	EPA 1668A	NA	0.030	0.016		ng/g	--	--	--	--	--	--	--	--
PCB 60	33025-41-1	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 61	33284-53-6	TA Knoxville	EPA 1668A	NA	0.040	0.011		ng/g	--	--	--	--	--	--	--	--
PCB 62	54230-22-7	TA Knoxville	EPA 1668A	NA	0.030	0.016		ng/g	--	--	--	--	--	--	--	--
PCB 63	74472-34-7	TA Knoxville	EPA 1668A	NA	0.010	0.0027		ng/g	--	--	--	--	--	--	--	--
PCB 64	52663-58-8	TA Knoxville	EPA 1668A	NA	0.010	0.0027		ng/g	--	--	--	--	--	--	--	--
PCB 65	33284-54-7	TA Knoxville	EPA 1668A	NA	0.030	0.015		ng/g	--	--	--	--	--	--	--	--
PCB 66	32598-10-0	TA Knoxville	EPA 1668A	NA	0.010	0.0024		ng/g	--	--	--	--	--	--	--	--
PCB 67	73575-53-8	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 68	73575-52-7	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 69	60233-24-1	TA Knoxville	EPA 1668A	NA	0.020	0.0054		ng/g	--	--	--	--	--	--	--	--
PCB 70	32598-11-1	TA Knoxville	EPA 1668A	NA	0.040	0.011		ng/g	--	--	--	--	--	--	--	--
PCB 71	41464-46-4	TA Knoxville	EPA 1668A	NA	0.030	0.013		ng/g	--	--	--	--	--	--	--	--
PCB 72	41464-42-0	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 73	74338-23-1	TA Knoxville	EPA 1668A	NA	0.020	0.0048		ng/g	--	--	--	--	--	--	--	--
PCB 74	32690-93-0	TA Knoxville	EPA 1668A	NA	0.040	0.011		ng/g	--	--	--	--	--	--	--	--
PCB 75	32598-12-2	TA Knoxville	EPA 1668A	NA	0.030	0.016		ng/g	--	--	--	--	--	--	--	--
PCB 76	70362-48-0	TA Knoxville	EPA 1668A	NA	0.040	0.011		ng/g	--	--	--	--	--	--	--	--

Table 2b. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in Stratified Random Surface Sediment and Suspended Sediment Samples

PARCCS:		Comparability			Sensitivity				Accuracy and Precision							
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits ²	Achievable Laboratory MDLs ²	Laboratory EDLs	Units	MS/MSD			LCS/LCSD				
									Percent Recovery (%)		RPD (%)	Percent Recovery (%)		RPD (%)		
PCB 77	32598-13-3	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	50	--	150	50	50	--	150	50
PCB 78	70362-49-1	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 79	41464-48-6	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 80	33284-52-5	TA Knoxville	EPA 1668A	NA	0.010	0.0022		ng/g	--	--	--	--	--	--	--	--
PCB 81	70362-50-4	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	50	--	150	50	50	--	150	50
PCB 82	52663-62-4	TA Knoxville	EPA 1668A	NA	0.010	0.0029		ng/g	--	--	--	--	--	--	--	--
PCB 83	60145-20-2	TA Knoxville	EPA 1668A	NA	0.020	0.0054		ng/g	--	--	--	--	--	--	--	--
PCB 84	52663-60-2	TA Knoxville	EPA 1668A	NA	0.010	0.0042		ng/g	--	--	--	--	--	--	--	--
PCB 85	65510-45-4	TA Knoxville	EPA 1668A	NA	0.030	0.012		ng/g	--	--	--	--	--	--	--	--
PCB 86	55312-69-1	TA Knoxville	EPA 1668A	NA	0.060	0.046		ng/g	--	--	--	--	--	--	--	--
PCB 87	38380-02-8	TA Knoxville	EPA 1668A	NA	0.060	0.046		ng/g	--	--	--	--	--	--	--	--
PCB 88	55215-17-3	TA Knoxville	EPA 1668A	NA	0.020	0.0064		ng/g	--	--	--	--	--	--	--	--
PCB 89	73575-57-2	TA Knoxville	EPA 1668A	NA	0.010	0.0030		ng/g	--	--	--	--	--	--	--	--
PCB 90	68194-07-0	TA Knoxville	EPA 1668A	NA	0.030	0.014		ng/g	--	--	--	--	--	--	--	--
PCB 91	68194-05-8	TA Knoxville	EPA 1668A	NA	0.020	0.0064		ng/g	--	--	--	--	--	--	--	--
PCB 92	52663-61-3	TA Knoxville	EPA 1668A	NA	0.010	0.0028		ng/g	--	--	--	--	--	--	--	--
PCB 93	73575-56-1	TA Knoxville	EPA 1668A	NA	0.020	0.0070		ng/g	--	--	--	--	--	--	--	--
PCB 94	73575-55-0	TA Knoxville	EPA 1668A	NA	0.010	0.0035		ng/g	--	--	--	--	--	--	--	--
PCB 95	38379-99-6	TA Knoxville	EPA 1668A	NA	0.010	0.0042		ng/g	--	--	--	--	--	--	--	--
PCB 96	73575-54-9	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 97	41464-51-1	TA Knoxville	EPA 1668A	NA	0.060	0.046		ng/g	--	--	--	--	--	--	--	--
PCB 98	60233-25-2	TA Knoxville	EPA 1668A	NA	0.020	0.0064		ng/g	--	--	--	--	--	--	--	--
PCB 99	38380-01-7	TA Knoxville	EPA 1668A	NA	0.020	0.0054		ng/g	--	--	--	--	--	--	--	--
PCB 100	39485-83-1	TA Knoxville	EPA 1668A	NA	0.020	0.0070		ng/g	--	--	--	--	--	--	--	--
PCB 101	37680-73-2	TA Knoxville	EPA 1668A	NA	0.030	0.014		ng/g	--	--	--	--	--	--	--	--
PCB 102	68194-06-9	TA Knoxville	EPA 1668A	NA	0.020	0.0064		ng/g	--	--	--	--	--	--	--	--
PCB 103	60145-21-3	TA Knoxville	EPA 1668A	NA	0.010	0.0031		ng/g	--	--	--	--	--	--	--	--
PCB 104	56558-16-8	TA Knoxville	EPA 1668A	NA	0.010	0.0021		ng/g	50	--	150	50	50	--	150	50
PCB 105	32598-14-4	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	50	--	150	50	50	--	150	50
PCB 106	70424-69-0	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 107	70424-68-9	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 108	70362-41-3	TA Knoxville	EPA 1668A	NA	0.020	0.0040		ng/g	--	--	--	--	--	--	--	--
PCB 109	74472-35-8	TA Knoxville	EPA 1668A	NA	0.060	0.046		ng/g	--	--	--	--	--	--	--	--
PCB 110	38380-03-9	TA Knoxville	EPA 1668A	NA	0.020	0.007		ng/g	--	--	--	--	--	--	--	--
PCB 111	39635-32-0	TA Knoxville	EPA 1668A	NA	0.010	0.002		ng/g	--	--	--	--	--	--	--	--
PCB 112	74472-36-9	TA Knoxville	EPA 1668A	NA	0.010	0.004		ng/g	--	--	--	--	--	--	--	--
PCB 113	68194-10-5	TA Knoxville	EPA 1668A	NA	0.030	0.014		ng/g	--	--	--	--	--	--	--	--
PCB 114	74472-37-0	TA Knoxville	EPA 1668A	NA	0.010	0.003		ng/g	50	--	150	50	50	--	150	50
PCB 115	74472-38-1	TA Knoxville	EPA 1668A	NA	0.020	0.007		ng/g	--	--	--	--	--	--	--	--
PCB 116	18259-05-7	TA Knoxville	EPA 1668A	NA	0.030	0.012		ng/g	--	--	--	--	--	--	--	--
PCB 117	68194-11-6	TA Knoxville	EPA 1668A	NA	0.030	0.012		ng/g	--	--	--	--	--	--	--	--
PCB 118	31508-00-6	TA Knoxville	EPA 1668A	NA	0.010	0.0022		ng/g	50	--	150	50	50	--	150	50
PCB 119	56558-17-9	TA Knoxville	EPA 1668A	NA	0.060	0.046		ng/g	--	--	--	--	--	--	--	--
PCB 120	68194-12-7	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 121	56558-18-0	TA Knoxville	EPA 1668A	NA	0.010	0.0023		ng/g	--	--	--	--	--	--	--	--
PCB 122	76842-07-4	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 123	65510-44-3	TA Knoxville	EPA 1668A	NA	0.010	0.0024		ng/g	50	--	150	50	50	--	150	50
PCB 124	70424-70-3	TA Knoxville	EPA 1668A	NA	0.020	0.0040		ng/g	--	--	--	--	--	--	--	--
PCB 125	74472-39-2	TA Knoxville	EPA 1668A	NA	0.060	0.046		ng/g	--	--	--	--	--	--	--	--

Table 2b. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in Stratified Random Surface Sediment and Suspended Sediment Samples

PARCCS:		Comparability			Sensitivity				Accuracy and Precision							
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits ²	Achievable Laboratory MDLs ²	Laboratory EDLs	Units	MS/MSD			LCS/LCSD				
									Percent Recovery (%)		RPD (%)	Percent Recovery (%)		RPD (%)		
PCB 126	57465-28-8	TA Knoxville	EPA 1668A	NA	0.010	0.0027		ng/g	50	--	150	50	50	--	150	50
PCB 127	39635-33-1	TA Knoxville	EPA 1668A	NA	0.010	0.0023		ng/g	--	--	--	--	--	--	--	--
PCB 128	38380-07-3	TA Knoxville	EPA 1668A	NA	0.020	0.010		ng/g	--	--	--	--	--	--	--	--
PCB 129	55215-18-4	TA Knoxville	EPA 1668A	NA	0.040	0.023		ng/g	--	--	--	--	--	--	--	--
PCB 130	52663-66-8	TA Knoxville	EPA 1668A	NA	0.010	0.0023		ng/g	--	--	--	--	--	--	--	--
PCB 131	61798-70-7	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 132	38380-05-1	TA Knoxville	EPA 1668A	NA	0.010	0.0024		ng/g	--	--	--	--	--	--	--	--
PCB 133	35694-04-3	TA Knoxville	EPA 1668A	NA	0.010	0.0030		ng/g	--	--	--	--	--	--	--	--
PCB 134	52704-70-8	TA Knoxville	EPA 1668A	NA	0.020	0.0086		ng/g	--	--	--	--	--	--	--	--
PCB 135	52744-13-5	TA Knoxville	EPA 1668A	NA	0.020	0.0074		ng/g	--	--	--	--	--	--	--	--
PCB 136	38411-22-2	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 137	35694-06-5	TA Knoxville	EPA 1668A	NA	0.010	0.0036		ng/g	--	--	--	--	--	--	--	--
PCB 138	35065-28-2	TA Knoxville	EPA 1668A	NA	0.040	0.023		ng/g	--	--	--	--	--	--	--	--
PCB 139	56030-56-9	TA Knoxville	EPA 1668A	NA	0.020	0.0060		ng/g	--	--	--	--	--	--	--	--
PCB 140	59291-64-4	TA Knoxville	EPA 1668A	NA	0.020	0.0060		ng/g	--	--	--	--	--	--	--	--
PCB 141	52712-04-6	TA Knoxville	EPA 1668A	NA	0.010	0.0035		ng/g	--	--	--	--	--	--	--	--
PCB 142	41411-61-4	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 143	68194-15-0	TA Knoxville	EPA 1668A	NA	0.020	0.0086		ng/g	--	--	--	--	--	--	--	--
PCB 144	68194-14-9	TA Knoxville	EPA 1668A	NA	0.010	0.0034		ng/g	--	--	--	--	--	--	--	--
PCB 145	74472-40-5	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 146	51908-16-8	TA Knoxville	EPA 1668A	NA	0.010	0.0040		ng/g	--	--	--	--	--	--	--	--
PCB 147	68194-13-8	TA Knoxville	EPA 1668A	NA	0.020	0.0048		ng/g	--	--	--	--	--	--	--	--
PCB 148	74472-41-6	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 149	38380-04-0	TA Knoxville	EPA 1668A	NA	0.020	0.0048		ng/g	--	--	--	--	--	--	--	--
PCB 150	68194-08-1	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 151	52663-63-5	TA Knoxville	EPA 1668A	NA	0.020	0.0074		ng/g	--	--	--	--	--	--	--	--
PCB 152	68194-09-2	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 153	35065-27-1	TA Knoxville	EPA 1668A	NA	0.020	0.0036		ng/g	--	--	--	--	--	--	--	--
PCB 154	60145-22-4	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 155	33979-03-2	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	50	--	150	50	50	--	150	50
PCB 156	38380-08-4	TA Knoxville	EPA 1668A	NA	0.020	0.0048		ng/g	50	--	150	50	50	--	150	50
PCB 157	69782-90-7	TA Knoxville	EPA 1668A	NA	0.020	0.0048		ng/g	50	--	150	50	50	--	150	50
PCB 158	74472-42-7	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 159	39635-35-3	TA Knoxville	EPA 1668A	NA	0.010	0.0022		ng/g	--	--	--	--	--	--	--	--
PCB 160	41411-62-5	TA Knoxville	EPA 1668A	NA	0.040	0.023		ng/g	--	--	--	--	--	--	--	--
PCB 161	74472-43-8	TA Knoxville	EPA 1668A	NA	0.010	0.0028		ng/g	--	--	--	--	--	--	--	--
PCB 162	39635-34-2	TA Knoxville	EPA 1668A	NA	0.010	0.0022		ng/g	--	--	--	--	--	--	--	--
PCB 163	74472-44-9	TA Knoxville	EPA 1668A	NA	0.040	0.023		ng/g	--	--	--	--	--	--	--	--
PCB 164	74472-45-0	TA Knoxville	EPA 1668A	NA	0.010	0.0036		ng/g	--	--	--	--	--	--	--	--
PCB 165	74472-46-1	TA Knoxville	EPA 1668A	NA	0.010	0.0024		ng/g	--	--	--	--	--	--	--	--
PCB 166	41411-63-6	TA Knoxville	EPA 1668A	NA	0.020	0.010		ng/g	--	--	--	--	--	--	--	--
PCB 167	52663-72-6	TA Knoxville	EPA 1668A	NA	0.010	0.0025		ng/g	50	--	150	50	50	--	150	50
PCB 168	59291-65-5	TA Knoxville	EPA 1668A	NA	0.020	0.0036		ng/g	--	--	--	--	--	--	--	--
PCB 169	32774-16-6	TA Knoxville	EPA 1668A	NA	0.010	0.0023		ng/g	50	--	150	50	50	--	150	50
PCB 170	35065-30-6	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 171	52663-71-5	TA Knoxville	EPA 1668A	NA	0.020	0.0086		ng/g	--	--	--	--	--	--	--	--
PCB 172	52663-74-8	TA Knoxville	EPA 1668A	NA	0.010	0.0030		ng/g	--	--	--	--	--	--	--	--
PCB 173	68194-16-1	TA Knoxville	EPA 1668A	NA	0.020	0.0086		ng/g	--	--	--	--	--	--	--	--
PCB 174	38411-25-5	TA Knoxville	EPA 1668A	NA	0.010	0.0029		ng/g	--	--	--	--	--	--	--	--

Table 2b. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in Stratified Random Surface Sediment and Suspended Sediment Samples

PARCCS:		Comparability		Sensitivity					Accuracy and Precision							
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits ²	Achievable Laboratory MDLs ²	Laboratory EDLs	Units	MS/MSD				LCS/LCSD			
									Percent Recovery (%)		RPD (%)		Percent Recovery (%)		RPD (%)	
PCB 175	40186-70-7	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 176	52663-65-7	TA Knoxville	EPA 1668A	NA	0.010	0.0021		ng/g	--	--	--	--	--	--	--	--
PCB 177	52663-70-4	TA Knoxville	EPA 1668A	NA	0.010	0.0021		ng/g	--	--	--	--	--	--	--	--
PCB 178	52663-67-9	TA Knoxville	EPA 1668A	NA	0.010	0.0024		ng/g	--	--	--	--	--	--	--	--
PCB 179	52663-64-6	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 180	35065-29-3	TA Knoxville	EPA 1668A	NA	0.020	0.0074		ng/g	--	--	--	--	--	--	--	--
PCB 181	74472-47-2	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 182	60145-23-5	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 183	52663-69-1	TA Knoxville	EPA 1668A	NA	0.020	0.0052		ng/g	--	--	--	--	--	--	--	--
PCB 184	74472-48-3	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 185	52712-05-7	TA Knoxville	EPA 1668A	NA	0.020	0.0052		ng/g	--	--	--	--	--	--	--	--
PCB 186	74472-49-4	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 187	52663-68-0	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 188	74487-85-7	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	50	--	150	50	50	--	150	50
PCB 189	39635-31-9	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	50	--	150	50	50	--	150	50
PCB 190	41411-64-7	TA Knoxville	EPA 1668A	NA	0.010	0.0026		ng/g	--	--	--	--	--	--	--	--
PCB 191	74472-50-7	TA Knoxville	EPA 1668A	NA	0.010	0.0024		ng/g	--	--	--	--	--	--	--	--
PCB 192	74472-51-8	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 193	69782-91-8	TA Knoxville	EPA 1668A	NA	0.020	0.0074		ng/g	--	--	--	--	--	--	--	--
PCB 194	35694-08-7	TA Knoxville	EPA 1668A	NA	0.010	0.0026		ng/g	--	--	--	--	--	--	--	--
PCB 195	52663-78-2	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 196	42740-50-1	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 197	33091-17-7	TA Knoxville	EPA 1668A	NA	0.010	0.0029		ng/g	--	--	--	--	--	--	--	--
PCB 198	68194-17-2	TA Knoxville	EPA 1668A	NA	0.020	0.0074		ng/g	--	--	--	--	--	--	--	--
PCB 199	52663-75-9	TA Knoxville	EPA 1668A	NA	0.020	0.0074		ng/g	--	--	--	--	--	--	--	--
PCB 200	52663-73-7	TA Knoxville	EPA 1668A	NA	0.010	0.0029		ng/g	--	--	--	--	--	--	--	--
PCB 201	40186-71-8	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 202	2136-99-4	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	50	--	150	50	50	--	150	50
PCB 203	52663-76-0	TA Knoxville	EPA 1668A	NA	0.010	0.0025		ng/g	--	--	--	--	--	--	--	--
PCB 204	74472-52-9	TA Knoxville	EPA 1668A	NA	0.010	0.0026		ng/g	--	--	--	--	--	--	--	--
PCB 205	74472-53-0	TA Knoxville	EPA 1668A	NA	0.010	0.0021		ng/g	50	--	150	50	50	--	150	50
PCB 206	40186-72-9	TA Knoxville	EPA 1668A	NA	0.010	0.0029		ng/g	50	--	150	50	50	--	150	50
PCB 207	52663-79-3	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	--	--	--	--	--	--	--	--
PCB 208	52663-77-1	TA Knoxville	EPA 1668A	NA	0.010	0.0020		ng/g	50	--	150	50	50	--	150	50
PCB 209	2051-24-3	TA Knoxville	EPA 1668A	NA	0.010	0.0021		ng/g	--	--	--	--	--	--	--	--
TPH-Diesel																
CA Diesel Range Organics (C10-C24)	STL00143	TA Seattle	Ecology NWTPH-Dx	91	50	12.3		mg/kg	70	--	125	16	70	--	125	16
CA Extended Range Organics (>C24-C36)	STL00293	TA Seattle	Ecology NWTPH-Dx	91	50	9.0		mg/kg	70	--	119	16	70	--	119	16
Other																
Tributyltin (bulk sediment)	NA	ALS Kelso	Unger et al	3080	1	0.43		µg/kg	10	--	115	40	10	--	122	40
Total Organic Carbon	7440-44-0	TA Seattle	EPA 9060	NA	2000	44.4		mg/kg	68	--	149	32	68	--	149	32
Total Solids	NA	ALS Kelso/TA	EPA 160.3M	NA	NA	NA		NA	--	--	--	20	--	--	--	20

Table 2b. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in Stratified Random Surface Sediment and Suspended Sediment Samples

PARCCS:		Comparability		Sensitivity					Accuracy and Precision			
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits ²	Achievable Laboratory MDLs ²	Laboratory EDLs	Units	MS/MSD		LCS/LCSD	
									Percent Recovery (%)	RPD (%)	Percent Recovery (%)	RPD (%)

Notes:
¹ From Table 17 of the ROD.
² Project action limits and laboratory MDLs are reported on a dry weight basis.
³ The laboratory will analyze for both the 2,4 and 4,4 DDD, DDE and DDT isomers.
⁴ Samples will be reported to sample specific EDLs. Method 1668 also reports to sample specific EMLs.
Accuracy and precision values, as well as MDLs, provided by the laboratory. These are presented for informational purposes only. Data review/validation will be based on the most current control limits in effect at the time of analysis.

Abbreviations:
-- = not provided
µg/kg = micrograms per kilogram
ASTM = American Society for Testing and Materials
BaP = benzo(a)pyrene
BEHP = Bis(2-ethylhexyl) phthalate
CA = California
CAS = Chemical Abstract Service
cPAH = carcinogenic polycyclic aromatic hydrocarbons
DDx = dichlorodiphenyltrichloroethane and its derivatives
EDL = Estimated detection limit
EML = Estimated minimum level
EPA = Environmental Protection Agency
LCS = Laboratory Control Sample
LCSD = Laboratory Control Sample Duplicate
MDL = Method Detection Limit
mg/kg = milligrams per kilogram
MS = Matrix Spike
MSD = Matrix Spike Duplicate
NA = not applicable
ng/g = nanograms per gram
PAH = polycyclic aromatic hydrocarbons
PARCCS = Precision, Accuracy, Representativeness, Completeness, Comparability and Sensitivity
PCB = polychlorinated biphenyl
pg/g = picograms per gram
PSEP = Puget Sound Estuary Protocols
RI = remedial investigation
ROD = record of decision
RPD = Relative Percent Difference
SIM = Selective Ion Monitoring
SVOCs = semi volatile organic compounds
TA = TestAmerica

Table 2c. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in Surface Water Samples

PARCCS:		Comparability		Sensitivity				Accuracy and Precision							
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits	Achievable Laboratory MDLs	Units	MS/MSD ⁶				LCS/LCSD ⁶			
								Percent Recovery (%)		RPD (%)	Percent Recovery (%)		RPD (%)		
Low Volume Surface Water Samples, PP Method (whole water)															
Ethylbenzene															
Ethylbenzene	100-41-4	TA Seattle	EPA 8260C	7.3	3.0	0.21	µg/L	75	--	119	35	75	--	120	14
MCP															
MCP	93-65-2	TA Seattle	EPA 8151A	16	0.25	0.020	µg/L	51	--	150	35	51	--	150	35
Semi Volatile Organic Compounds (SVOCs)															
bis-(2-ethylhexyl) phthalate (BEHP)	117-81-7	ALS Kelso	EPA 8270D-LL	0.2	1	0.13	µg/L	10	--	171	30	42	--	147	30
Pentachlorophenol (PCP)	87-86-5	ALS Kelso	EPA 8270D-SIM	0.03	0.04	0.005	µg/L	10	--	156	30	10	--	123	30
Total Solids															
Total Suspended Solids	STL00177	TA Seattle	EPA SM 2540D	NA	2.0	2.0	mg/L	--	--	--	--	70.6	--	120	20
Total Dissolved Solids	STL00242	TA Seattle	EPA SM 2540C	NA	10.0	10.0	mg/L	--	--	--	--	80	--	120	20
Tributyltin															
Tributyltin	NA	ALS Kelso	Unger et al.	0.063	0.05	0.012	µg/L	17	--	142	30	32	--	122	30
Metals (Total and Dissolved Fractions)²															
Arsenic	7440-38-2	TA Seattle	EPA 6020B LL	0.000018	0.0010	0.00027	mg/L	80	--	120	20	80	--	120	20
Calcium	7440-70-2	TA Seattle	EPA 6010C	NA	1.10	0.155	mg/L	75	--	125	20	80	--	120	20
Chromium	7440-43-9	TA Seattle	EPA 6020B LL	0.100	0.00040	0.000141	mg/L	80	--	120	20	80	--	120	20
Copper	7440-50-8	TA Seattle	EPA 6020B LL	0.00274	0.0020	0.000603	mg/L	80	--	120	20	80	--	120	20
Magnesium	7439-95-4	TA Seattle	EPA 6010C	NA	1.1000	0.133	mg/L	75	--	125	20	80	--	120	20
Zinc	7440-66-6	TA Seattle	EPA 6020B LL	0.0365	0.0070	0.0019	mg/L	80	--	120	20	80	--	120	20
Hardness (by Calculation)	--	TA Seattle	#VALUE!	NA	NA	NA	mg/L	--	--	--	--	--	--	--	--
Dissolved Organic Carbon²															
Dissolved Organic Carbon	7440-44-0	TA Seattle	SM5310B	NA	1.0	0.19	mg/L	85	--	115	20	85	--	115	20
High Volume Samples, Dissolved Phase, XAD2 Resin ⁵															
Chlorinated Pesticides + Hexachlorobenzene³															
Aldrin	309-00-2	SGS AXYS	MLA-028/EPA 1699	0.00000077 µg/L	0.000000667	NA	µg/L	--	--	--	--	70	--	130	40
Chlordanes (alpha, gamma, technical)	57-74-9	SGS AXYS	MLA-028/EPA 1699	0.000081 µg/L	0.000000667	NA	µg/L	--	--	--	--	70	--	130	40
DDx	NA	SGS AXYS	MLA-028/EPA 1699	0.01 µg/L	NA	NA	µg/L	--	--	--	--	--	--	--	--
DDD ³	NA	SGS AXYS	MLA-028/EPA 1699	0.000031 µg/L	0.000000667	NA	µg/L	--	--	--	--	70	--	130	40
DDE ³	NA	SGS AXYS	MLA-028/EPA 1699	0.000018 µg/L	0.000000667	NA	µg/L	--	--	--	--	70	--	130	40
DDT ³	NA	SGS AXYS	MLA-028/EPA 1699	0.000022 µg/L	0.000000667	NA	µg/L	--	--	--	--	70	--	130	40
Hexachlorobenzene	118-74-1	SGS AXYS	MLA-028/EPA 1699	0.000029 µg/L	0.000000333	NA	µg/L	--	--	--	--	70	--	130	40
Dioxins/Furans⁴															
Dioxins/Furans (2,3,7,8-TCDD eq)	NA	SGS AXYS	MLA-017/EPA 1613B	0.0000000005 ug/L	NA	NA	ug/L	--	--	--	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1746-01-6	SGS AXYS	MLA-017/EPA 1613B	NA	0.00000000167	NA	ug/L	--	--	-	--	70	--	130	40

Table 2c. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in Surface Water Samples

PARCCS:		Comparability			Sensitivity				Accuracy and Precision						
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits	Achievable Laboratory MDLs	Units	MS/MSD ⁶				LCS/LCSD ⁶			
								Percent Recovery (%)		RPD (%)	Percent Recovery (%)		RPD (%)		
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	40321-76-4	SGS AXYS	MLA-017/EPA 1613B	NA	0.0000000167	NA	ug/L	--	--	-	--	70	--	130	40
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	SGS AXYS	MLA-017/EPA 1613B	NA	0.0000000167	NA	ug/L	--	--	-	--	70	--	130	40
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	SGS AXYS	MLA-017/EPA 1613B	NA	0.0000000167	NA	ug/L	--	--	-	--	76	--	130	40
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	SGS AXYS	MLA-017/EPA 1613B	NA	0.0000000167	NA	ug/L	--	--	-	--	70	--	130	40
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	SGS AXYS	MLA-017/EPA 1613B	NA	0.0000000167	NA	ug/L	--	--	-	--	70	--	130	40
1,2,3,4,5,6,7,8-Octachlorodibenzo-p-dioxin	3268-87-9	SGS AXYS	MLA-017/EPA 1613B	NA	0.0000000167	NA	ug/L	--	--	-	--	78	--	130	40
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	51207-31-9	SGS AXYS	MLA-017/EPA 1613B	NA	0.0000000167	NA	ug/L	--	--	-	--	70	--	130	40
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	57117-41-6	SGS AXYS	MLA-017/EPA 1613B	NA	0.0000000167	NA	ug/L	--	--	-	--	80	--	130	40
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	57117-31-4	SGS AXYS	MLA-017/EPA 1613B	NA	0.0000000167	NA	ug/L	--	--	-	--	70	--	130	40
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	70648-26-9	SGS AXYS	MLA-017/EPA 1613B	NA	0.0000000167	NA	ug/L	--	--	-	--	72	--	130	40
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	57117-44-9	SGS AXYS	MLA-017/EPA 1613B	NA	0.0000000167	NA	ug/L	--	--	-	--	84	--	130	40
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	72918-21-9	SGS AXYS	MLA-017/EPA 1613B	NA	0.0000000167	NA	ug/L	--	--	-	--	78	--	130	40
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	60851-34-5	SGS AXYS	MLA-017/EPA 1613B	NA	0.0000000167	NA	ug/L	--	--	-	--	70	--	130	40
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	67562-39-4	SGS AXYS	MLA-017/EPA 1613B	NA	0.0000000167	NA	ug/L	--	--	-	--	82	--	122	40
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	55673-89-7	SGS AXYS	MLA-017/EPA 1613B	NA	0.0000000167	NA	ug/L	--	--	-	--	78	--	130	40
1,2,3,4,5,6,7,8-Octachlorodibenzofuran (OCDF)	39001-02-0	SGS AXYS	MLA-017/EPA 1613B	NA	0.0000000167	NA	ug/L	--	--	-	--	70	--	130	40
PCB Congeners ⁴															
Total PCBs	NA	SGS AXYS	MLA-010/EPA 1668A	0.0000064 ug/L	NA	NA	µg/L	--	--	--	--	--	--	--	--
CL1-PCB-1	2051-60-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL1-PCB-2	2051-61-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL1-PCB-3	2051-62-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL2-PCB-4	13029-08-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000667	NA	µg/L	--	--	--	--	50	--	150	40
CL2-PCB-5	16605-91-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000667	NA	µg/L	--	--	--	--	50	--	150	40
CL2-PCB-6	25569-80-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000667	NA	µg/L	--	--	--	--	50	--	150	40
CL2-PCB-7	33284-50-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000667	NA	µg/L	--	--	--	--	50	--	150	40
CL2-PCB-8	34883-43-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000667	NA	µg/L	--	--	--	--	50	--	150	40
CL2-PCB-9	34883-39-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000667	NA	µg/L	--	--	--	--	50	--	150	40
CL2-PCB-10	33146-45-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000667	NA	µg/L	--	--	--	--	50	--	150	40
CL2-PCB-11	2050-67-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000667	NA	µg/L	--	--	--	--	50	--	150	40
CL2-PCB-12/13	2974-92-7/2974-90-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000667	NA	µg/L	--	--	--	--	50	--	150	40
CL2-PCB-14	34883-41-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000667	NA	µg/L	--	--	--	--	50	--	150	40
CL2-PCB-15	2050-68-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000667	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-16	38444-78-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-17	37680-66-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-19	38444-73-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-21/33	55702-46-0/38444-86-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-22	38444-85-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-23	55720-44-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-24	55702-45-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-25	55712-37-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-26/29	38444-81-4/15862-07-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-27	38444-76-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40

Table 2c. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in Surface Water Samples

PARCCS:		Comparability		Sensitivity				Accuracy and Precision							
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits	Achievable Laboratory MDLs	Units	MS/MSD ⁶				LCS/LCSD ⁶			
								Percent Recovery (%)		RPD (%)		Percent Recovery (%)		RPD (%)	
CL3-PCB-28/20	7012-37-5/38444-84-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-30/18	35693-92-6/37680-65-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-31	16606-02-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-32	38444-77-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-34	37680-68-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-35	37680-69-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-36	38444-87-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-37	38444-90-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-38	53555-66-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-39	38444-88-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-41/40/71	52663-59-9/ 38444-93-8/41464-46-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-42	36559-22-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-43	70362-46-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-44/47/65	41464-39-5/ 2437-79-8/33284-54-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-45/51	70362-45-7/68194-04-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-46	41464-47-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-48	70362-47-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-50/53	62796-65-0/41464-41-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-52	35693-99-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-54	15968-05-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-55	74338-24-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-56	41464-43-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-57	70424-67-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-58	41464-49-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-59/62/75	74472-33-6/ 54230-22-7/32598-12-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-60	33025-41-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-61/70/74/76	33284-53-6/32598-11-1/ 32690-93-0/70362-48-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-63	74472-34-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-64	52663-58-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-66	32598-10-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-67	73575-53-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-68	73575-52-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-69/49	60233-24-1/41464-40-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-72	41464-42-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-73	74338-23-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-77	32598-13-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-78	70362-49-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-79	41464-48-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-80	33284-52-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-81	70362-50-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-82	52663-62-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40

Table 2c. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in Surface Water Samples

PARCCS:		Comparability		Sensitivity				Accuracy and Precision							
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits	Achievable Laboratory MDLs	Units	MS/MSD ⁶				LCS/LCSD ⁶			
								Percent Recovery (%)		RPD (%)		Percent Recovery (%)		RPD (%)	
CL5-PCB-83/99	60145-20-2/38380-01-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-84	52663-60-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-88/91	55215-17-3/68194-05-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-89	73575-57-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-92	52663-61-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-94	73575-55-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-95/100/93/102/98	38379-99-6/39485-83-1/ 73575-56-1/68194-06-9/ 60233-25-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-96	73575-54-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-103	60145-21-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-104	56558-16-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-105	32598-14-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-106	70424-69-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-107/124	70424-68-9/70424-70-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-108/119/86/97/125/87	70362-41-3/56558-17-9/ 55312-69-1/41464-51-1/ 74472-39-2/38380-02-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-109	74472-35-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-110/115	38380-03-9/74472-38-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-111	39635-32-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-112	74472-36-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-113/90/101	68194-10-5/68194-07-0/ 37680-73-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-114	74472-37-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-117/116/85	68194-11-6/18259-05-7/ 65510-45-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-118	31508-00-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-120	68194-12-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-121	56558-18-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-122	76842-07-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-123	65510-44-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-126	57465-28-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-127	39635-33-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-128/166	38380-07-3/41411-63-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-130	52663-66-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-131	61798-70-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-132	38380-05-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-133	35694-04-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-134/143	52704-70-8/68194-15-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-136	38411-22-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-137	35694-06-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40

Table 2c. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in Surface Water Samples

PARCCS:	Comparability			Sensitivity				Accuracy and Precision							
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits	Achievable Laboratory MDLs	Units	MS/MSD ⁶				LCS/LCSD ⁶			
								Percent Recovery (%)		RPD (%)		Percent Recovery (%)	RPD (%)		
CL6-PCB-138/163/129/160	35065-28-2/74472-44-9/ 55215-18-4/41411-62-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-139/140	56030-56-9/59291-64-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-141	52712-04-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-142	41411-61-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-144	68194-14-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-145	74472-40-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-146	51908-16-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-147/149	68194-13-8/38380-04-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-148	74472-41-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-150	68194-08-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-151/135/154	52663-63-5/52744-13-5/ 60145-22-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-152	68194-09-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-153/168	35065-27-1/59291-65-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-155	33979-03-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-156/157	38380-08-4/69782-90-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-158	74472-42-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-159	39635-35-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-161	74472-43-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-162	39635-34-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-164	74472-45-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-165	74472-46-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-167	52663-72-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-169	32774-16-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-170	35065-30-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-171/173	52663-71-5/68194-16-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-172	52663-74-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-174	38411-25-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-175	40186-70-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-176	52663-65-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-177	52663-70-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-178	52663-67-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-179	52663-64-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-180/193	35065-29-3/69782-91-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-181	74472-47-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-182	60145-23-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-183/185	52663-69-1/52712-05-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-184	74472-48-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-186	74472-49-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-187	52663-68-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-188	74487-85-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-189	39635-31-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-190	41411-64-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40

Table 2c. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in Surface Water Samples

PARCCS:		Comparability		Sensitivity				Accuracy and Precision							
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits	Achievable Laboratory MDLs	Units	MS/MSD ⁶				LCS/LCSD ⁶			
								Percent Recovery (%)		RPD (%)		Percent Recovery (%)		RPD (%)	
CL7-PCB-191	74472-50-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-192	74472-51-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL8-PCB-194	35694-08-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL8-PCB-195	52663-78-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL8-PCB-196	42740-50-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL8-PCB-197/200	33091-17-7/52663-73-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL8-PCB-198/199	68194-17-2/52663-75-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL8-PCB-201	40186-71-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL8-PCB-202	2136-99-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL8-PCB-203	52663-76-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL8-PCB-204	74472-52-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL8-PCB-205	74472-53-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL9-PCB-206	40186-72-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL9-PCB-207	52663-79-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL9-PCB-208	52663-77-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL10-PCB-209	2051-24-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
PAHs³															
cPAHs (BaP equivalent)	NA	SGS AXYS	MLA-021/EPA 8270D/1625M	0.00012 ug/L	NA	NA	ug/L	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	SGS AXYS	MLA-021/EPA 8270D/1625M	NA	0.000050	NA	ug/L	--	--	--	--	70	--	130	40
Acenaphthylene	208-96-8	SGS AXYS	MLA-021/EPA 8270D/1625M	NA	0.000050	NA	ug/L	--	--	--	--	70	--	140	40
Anthracene	120-12-7	SGS AXYS	MLA-021/EPA 8270D/1625M	NA	0.000050	NA	ug/L	--	--	--	--	70	--	130	40
Benzo(a)anthracene	56-55-3	SGS AXYS	MLA-021/EPA 8270D/1625M	0.0012 ug/L	0.000050	NA	ug/L	--	--	--	--	70	--	130	40
Benzo(a)pyrene	50-32-8	SGS AXYS	MLA-021/EPA 8270D/1625M	0.00012 ug/L	0.000050	NA	ug/L	--	--	--	--	70	--	130	40
Benzo(b)fluoranthene	205-99-2	SGS AXYS	MLA-021/EPA 8270D/1625M	0.0012 ug/L	0.000050	NA	ug/L	--	--	--	--	70	--	130	40
Benzo(g,h,i)perylene	191-24-2	SGS AXYS	MLA-021/EPA 8270D/1625M	NA	0.00010	NA	ug/L	--	--	--	--	70	--	130	40
Benzo(k)fluoranthene	207-08-9	SGS AXYS	MLA-021/EPA 8270D/1625M	0.0013 ug/L	0.000050	NA	ug/L	--	--	--	--	70	--	130	40
Chrysene	218-01-9	SGS AXYS	MLA-021/EPA 8270D/1625M	0.0013 ug/L	0.000050	NA	ug/L	--	--	--	--	70	--	130	40
Dibenz(a,h)anthracene	53-70-3	SGS AXYS	MLA-021/EPA 8270D/1625M	0.00012 ug/L	0.00010	NA	ug/L	--	--	--	--	70	--	130	40
Fluoranthene	206-44-0	SGS AXYS	MLA-021/EPA 8270D/1625M	NA	0.000050	NA	ug/L	--	--	--	--	70	--	130	40
Fluorene	86-73-7	SGS AXYS	MLA-021/EPA 8270D/1625M	NA	0.000050	NA	ug/L	--	--	--	--	60	--	140	40
Indeno(1,2,3-cd)pyrene	193-39-5	SGS AXYS	MLA-021/EPA 8270D/1625M	0.0012 ug/L	0.00010	NA	ug/L	--	--	--	--	70	--	130	40
2-Methylnaphthalene	91-57-6	SGS AXYS	MLA-021/EPA 8270D/1625M	NA	0.00010	NA	ug/L	--	--	--	--	70	--	130	40
Naphthalene	91-20-3	SGS AXYS	MLA-021/EPA 8270D/1625M	12 ug/L	0.000050	NA	ug/L	--	--	--	--	70	--	130	40
Phenanthrene	85-01-8	SGS AXYS	MLA-021/EPA 8270D/1625M	NA	0.000050	NA	ug/L	--	--	--	--	70	--	130	40
Pyrene	129-00-0	SGS AXYS	MLA-021/EPA 8270D/1625M	NA	0.000050	NA	ug/L	--	--	--	--	70	--	130	40

Table 2c. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in Surface Water Samples

PARCCS:		Comparability		Sensitivity				Accuracy and Precision							
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits	Achievable Laboratory MDLs	Units	MS/MSD ⁶				LCS/LCSD ⁶			
								Percent Recovery (%)		RPD (%)	Percent Recovery (%)		RPD (%)		
High Volume Samples, Particulate (total fraction) ⁵															
Chlorinated Pesticides + Hexachlorobenzene ⁴															
Aldrin	309-00-2	SGS AXYS	MLA-028/EPA 1699	0.00000077 ug/L	0.000000667	NA	µg/L	--	--	--	--	70	--	130	40
Chlordanes (alpha, gamma, technical)	57-74-9	SGS AXYS	MLA-028/EPA 1699	0.000081 ug/L	0.000000667	NA	µg/L	--	--	--	--	70	--	130	40
DDx	NA	SGS AXYS	MLA-028/EPA 1699	0.01 ug/L	NA	NA	µg/L	--	--	--	--	70	--	130	40
DDD ³	NA	SGS AXYS	MLA-028/EPA 1699	0.000031 ug/L	0.000000667	NA	µg/L	--	--	--	--	70	--	130	40
DDE ³	NA	SGS AXYS	MLA-028/EPA 1699	0.000018 ug/L	0.000000667	NA	µg/L	--	--	--	--	70	--	130	40
DDT ³	NA	SGS AXYS	MLA-028/EPA 1699	0.000022 ug/L	0.000000667	NA	µg/L	--	--	--	--	70	--	130	40
Hexachlorobenzene	118-74-1	SGS AXYS	MLA-028/EPA 1699	0.000029 ug/L	0.000000333	NA	µg/L	--	--	--	--	70	--	130	40
Dioxins/Furans ³															
Dioxins/Furans (2,3,7,8-TCDD eq)	NA	SGS AXYS	MLA-017/EPA 1613B	0.0000000005 ug/L	NA	NA	ug/L	--	--	--	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1746-01-6	SGS AXYS	MLA-017/EPA 1613B	NA	0.00000000167	NA	ug/L	--	--	-	--	70	--	130	40
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	40321-76-4	SGS AXYS	MLA-017/EPA 1613B	NA	0.00000000167	NA	ug/L	--	--	-	--	70	--	130	40
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	SGS AXYS	MLA-017/EPA 1613B	NA	0.00000000167	NA	ug/L	--	--	-	--	70	--	130	40
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	SGS AXYS	MLA-017/EPA 1613B	NA	0.00000000167	NA	ug/L	--	--	-	--	76	--	130	40
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	SGS AXYS	MLA-017/EPA 1613B	NA	0.00000000167	NA	ug/L	--	--	-	--	70	--	130	40
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	SGS AXYS	MLA-017/EPA 1613B	NA	0.00000000167	NA	ug/L	--	--	-	--	70	--	130	40
1,2,3,4,5,6,7,8-Octachlorodibenzo-p-dioxin	3268-87-9	SGS AXYS	MLA-017/EPA 1613B	NA	0.00000000167	NA	ug/L	--	--	-	--	78	--	130	40
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	51207-31-9	SGS AXYS	MLA-017/EPA 1613B	NA	0.00000000167	NA	ug/L	--	--	-	--	70	--	130	40
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	57117-41-6	SGS AXYS	MLA-017/EPA 1613B	NA	0.00000000167	NA	ug/L	--	--	-	--	80	--	130	40
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	57117-31-4	SGS AXYS	MLA-017/EPA 1613B	NA	0.00000000167	NA	ug/L	--	--	-	--	70	--	130	40
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	70648-26-9	SGS AXYS	MLA-017/EPA 1613B	NA	0.00000000167	NA	ug/L	--	--	-	--	72	--	130	40
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	57117-44-9	SGS AXYS	MLA-017/EPA 1613B	NA	0.00000000167	NA	ug/L	--	--	-	--	84	--	130	40
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	72918-21-9	SGS AXYS	MLA-017/EPA 1613B	NA	0.00000000167	NA	ug/L	--	--	-	--	78	--	130	40
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	60851-34-5	SGS AXYS	MLA-017/EPA 1613B	NA	0.00000000167	NA	ug/L	--	--	-	--	70	--	130	40
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	67562-39-4	SGS AXYS	MLA-017/EPA 1613B	NA	0.00000000167	NA	ug/L	--	--	-	--	82	--	122	40
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	55673-89-7	SGS AXYS	MLA-017/EPA 1613B	NA	0.00000000167	NA	ug/L	--	--	-	--	78	--	130	40
1,2,3,4,5,6,7,8-Octachlorodibenzofuran (OCDF)	39001-02-0	SGS AXYS	MLA-017/EPA 1613B	NA	0.00000000167	NA	ug/L	--	--	-	--	70	--	130	40
PCB Congeners ⁴															
Total PCBs	NA	SGS AXYS	MLA-010/EPA 1668A	0.0000064 ug/L	NA	NA	µg/L	--	--	--	--	--	--	--	--
CL1-PCB-1	2051-60-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.00000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL1-PCB-2	2051-61-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.00000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL1-PCB-3	2051-62-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.00000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL2-PCB-4	13029-08-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.00000000667	NA	µg/L	--	--	--	--	50	--	150	40
CL2-PCB-5	16605-91-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.00000000667	NA	µg/L	--	--	--	--	50	--	150	40
CL2-PCB-6	25569-80-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.00000000667	NA	µg/L	--	--	--	--	50	--	150	40
CL2-PCB-7	33284-50-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.00000000667	NA	µg/L	--	--	--	--	50	--	150	40
CL2-PCB-8	34883-43-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.00000000667	NA	µg/L	--	--	--	--	50	--	150	40
CL2-PCB-9	34883-39-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.00000000667	NA	µg/L	--	--	--	--	50	--	150	40
CL2-PCB-10	33146-45-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.00000000667	NA	µg/L	--	--	--	--	50	--	150	40
CL2-PCB-11	2050-67-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.00000000667	NA	µg/L	--	--	--	--	50	--	150	40
CL2-PCB-12/13	2974-92-7/2974-90-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.00000000667	NA	µg/L	--	--	--	--	50	--	150	40
CL2-PCB-14	34883-41-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.00000000667	NA	µg/L	--	--	--	--	50	--	150	40
CL2-PCB-15	2050-68-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.00000000667	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-16	38444-78-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.00000000333	NA	µg/L	--	--	--	--	50	--	150	40

Table 2c. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in Surface Water Samples

PARCCS:		Comparability		Sensitivity				Accuracy and Precision							
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits	Achievable Laboratory MDLs	Units	MS/MSD ⁶				LCS/LCSD ⁶			
								Percent Recovery (%)		RPD (%)		Percent Recovery (%)		RPD (%)	
CL3-PCB-17	37680-66-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-19	38444-73-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-21/33	55702-46-0/38444-86-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-22	38444-85-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-23	55720-44-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-24	55702-45-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-25	55712-37-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-26/29	38444-81-4/15862-07-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-27	38444-76-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-28/20	7012-37-5/38444-84-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-30/18	35693-92-6/37680-65-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-31	16606-02-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-32	38444-77-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-34	37680-68-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-35	37680-69-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-36	38444-87-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-37	38444-90-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-38	53555-66-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL3-PCB-39	38444-88-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-41/40/71	52663-59-9/38444-93-8/ 41464-46-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-42	36559-22-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-43	70362-46-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-44/47/65	41464-39-5/2437-79-8/ 33284-54-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-45/51	70362-45-7/68194-04-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-46	41464-47-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-48	70362-47-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-50/53	62796-65-0/41464-41-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-52	35693-99-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-54	15968-05-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-55	74338-24-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-56	41464-43-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-57	70424-67-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-58	41464-49-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-59/62/75	74472-33-6/54230-22-7/ 32598-12-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-60	33025-41-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-61/70/74/76	33284-53-6/32598-11-1/ 32690-93-0/70362-48-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-63	74472-34-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-64	52663-58-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-66	32598-10-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-67	73575-53-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-68	73575-52-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-69/49	60233-24-1/41464-40-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40

Table 2c. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in Surface Water Samples

PARCCS:		Comparability		Sensitivity				Accuracy and Precision							
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits	Achievable Laboratory MDLs	Units	MS/MSD ⁶				LCS/LCSD ⁶			
								Percent Recovery (%)		RPD (%)		Percent Recovery (%)		RPD (%)	
CL4-PCB-72	41464-42-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-73	74338-23-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-77	32598-13-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-78	70362-49-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-79	41464-48-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-80	33284-52-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL4-PCB-81	70362-50-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-82	52663-62-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-83/99	60145-20-2/38380-01-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-84	52663-60-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-88/91	55215-17-3/68194-05-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-89	73575-57-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-92	52663-61-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-94	73575-55-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-95/100/93/102/98	38379-99-6/39485-83-1/ 73575-56-1/68194-06-9/ 60233-25-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-96	73575-54-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-103	60145-21-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-104	56558-16-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-105	32598-14-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-106	70424-69-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-107/124	70424-68-9/70424-70-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-108/119/86/97/125/87	70362-41-3/56558-17-9/ 55312-69-1/41464-51-1/ 74472-39-2/38380-02-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-109	74472-35-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-110/115	38380-03-9/74472-38-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-111	39635-32-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-112	74472-36-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-113/90/101	68194-10-5/68194-07-0/ 37680-73-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-114	74472-37-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-117/116/85	68194-11-6/18259-05-7/ 65510-45-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-118	31508-00-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-120	68194-12-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-121	56558-18-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-122	76842-07-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-123	65510-44-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-126	57465-28-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL5-PCB-127	39635-33-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-128/166	38380-07-3/41411-63-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-130	52663-66-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-131	61798-70-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-132	38380-05-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40

Table 2c. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in Surface Water Samples

PARCCS:		Comparability		Sensitivity				Accuracy and Precision							
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits	Achievable Laboratory MDLs	Units	MS/MSD ⁶				LCS/LCSD ⁶			
								Percent Recovery (%)		RPD (%)		Percent Recovery (%)		RPD (%)	
CL6-PCB-133	35694-04-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-134/143	52704-70-8/68194-15-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-136	38411-22-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-137	35694-06-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-138/163/129/160	35065-28-2/74472-44-9/ 55215-18-4/41411-62-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-139/140	56030-56-9/59291-64-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-141	52712-04-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-142	41411-61-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-144	68194-14-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-145	74472-40-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-146	51908-16-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-147/149	68194-13-8/38380-04-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-148	74472-41-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-150	68194-08-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-151/135/154	52663-63-5/52744-13-5/ 60145-22-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-152	68194-09-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-153/168	35065-27-1/59291-65-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-155	33979-03-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-156/157	38380-08-4/69782-90-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-158	74472-42-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-159	39635-35-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-161	74472-43-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-162	39635-34-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-164	74472-45-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-165	74472-46-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-167	52663-72-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL6-PCB-169	32774-16-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-170	35065-30-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-171/173	52663-71-5/68194-16-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-172	52663-74-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-174	38411-25-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-175	40186-70-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-176	52663-65-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-177	52663-70-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-178	52663-67-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-179	52663-64-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-180/193	35065-29-3/69782-91-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-181	74472-47-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-182	60145-23-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-183/185	52663-69-1/52712-05-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-184	74472-48-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-186	74472-49-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-187	52663-68-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-188	74487-85-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40

Table 2c. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in Surface Water Samples

PARCCS:		Comparability		Sensitivity				Accuracy and Precision							
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits	Achievable Laboratory MDLs	Units	MS/MSD ⁶				LCS/LCSD ⁶			
								Percent Recovery (%)		RPD (%)		Percent Recovery (%)		RPD (%)	
CL7-PCB-189	39635-31-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-190	41411-64-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-191	74472-50-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL7-PCB-192	74472-51-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL8-PCB-194	35694-08-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL8-PCB-195	52663-78-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL8-PCB-196	42740-50-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL8-PCB-197/200	33091-17-7/52663-73-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL8-PCB-198/199	68194-17-2/52663-75-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL8-PCB-201	40186-71-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL8-PCB-202	2136-99-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL8-PCB-203	52663-76-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL8-PCB-204	74472-52-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL8-PCB-205	74472-53-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL9-PCB-206	40186-72-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL9-PCB-207	52663-79-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL9-PCB-208	52663-77-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
CL10-PCB-209	2051-24-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.0000000333	NA	µg/L	--	--	--	--	50	--	150	40
PAHs⁴															
cPAHs (BaP equivalent)	NA	SGS AXYS	MLA-021/EPA 8270D/1625M	0.00012 ug/L	NA	NA	ug/L	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	SGS AXYS	MLA-021/EPA 8270D/1625M	NA	0.000050	NA	ug/L	--	--	--	--	70	--	130	40
Acenaphthylene	208-96-8	SGS AXYS	MLA-021/EPA 8270D/1625M	NA	0.000050	NA	ug/L	--	--	--	--	70	--	140	40
Anthracene	120-12-7	SGS AXYS	MLA-021/EPA 8270D/1625M	NA	0.000050	NA	ug/L	--	--	--	--	70	--	130	40
Benzo(a)anthracene	56-55-3	SGS AXYS	MLA-021/EPA 8270D/1625M	0.0012 ug/L	0.000050	NA	ug/L	--	--	--	--	70	--	130	40
Benzo(a)pyrene	50-32-8	SGS AXYS	MLA-021/EPA 8270D/1625M	0.00012 ug/L	0.000050	NA	ug/L	--	--	--	--	70	--	130	40
Benzo(b)fluoranthene	205-99-2	SGS AXYS	MLA-021/EPA 8270D/1625M	0.0012 ug/L	0.000050	NA	ug/L	--	--	--	--	70	--	130	40
Benzo(g,h,i)perylene	191-24-2	SGS AXYS	MLA-021/EPA 8270D/1625M	NA	0.00010	NA	ug/L	--	--	--	--	70	--	130	40
Benzo(k)fluoranthene	207-08-9	SGS AXYS	MLA-021/EPA 8270D/1625M	0.0013 ug/L	0.000050	NA	ug/L	--	--	--	--	70	--	130	40
Chrysene	218-01-9	SGS AXYS	MLA-021/EPA 8270D/1625M	0.0013 ug/L	0.000050	NA	ug/L	--	--	--	--	70	--	130	40
Dibenz(a,h)anthracene	53-70-3	SGS AXYS	MLA-021/EPA 8270D/1625M	0.00012 ug/L	0.00010	NA	ug/L	--	--	--	--	70	--	130	40
Fluoranthene	206-44-0	SGS AXYS	MLA-021/EPA 8270D/1625M	NA	0.000050	NA	ug/L	--	--	--	--	70	--	130	40
Fluorene	86-73-7	SGS AXYS	MLA-021/EPA 8270D/1625M	NA	0.000050	NA	ug/L	--	--	--	--	60	--	140	40
Indeno(1,2,3-cd)pyrene	193-39-5	SGS AXYS	MLA-021/EPA 8270D/1625M	0.0012 ug/L	0.00010	NA	ug/L	--	--	--	--	70	--	130	40
2-Methylnaphthalene	91-57-6	SGS AXYS	MLA-021/EPA 8270D/1625M	NA	0.00010	NA	ug/L	--	--	--	--	70	--	130	40
Naphthalene	91-20-3	SGS AXYS	MLA-021/EPA 8270D/1625M	12 ug/L	0.000050	NA	ug/L	--	--	--	--	70	--	130	40
Phenanthrene	85-01-8	SGS AXYS	MLA-021/EPA 8270D/1625M	NA	0.000050	NA	ug/L	--	--	--	--	70	--	130	40
Pyrene	129-00-0	SGS AXYS	MLA-021/EPA 8270D/1625M	NA	0.000050	NA	ug/L	--	--	--	--	70	--	130	40

Table 2c. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in Surface Water Samples

PARCCS:		Comparability		Sensitivity				Accuracy and Precision			
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits	Achievable Laboratory MDLs	Units	MS/MSD ⁶		LCS/LCSD ⁶	
								Percent Recovery (%)	RPD (%)	Percent Recovery (%)	RPD (%)

Notes:
bold font indicates that the project quantitation limit and method detection limit do not meet the ROD cleanup level

¹ From Table 17 of the ROD.

² Dissolved fraction for grab samples will be field filtered using a 0.45-micron filter.

³ The laboratory will analyze for both the 2,4 and 4,4 DDD, DDE and DDT isomers.

⁴ Samples will be reported to the Sample Detection Limit (SDL, equivalent to Estimated Detection Limit [EDL]), which are calculated per sample.

⁵ Surface water samples will be collected using both grab sampling and high volume sampling (HVS) methods as described in the FSP. Each HVS sample consist of two analytical matrices. The particulate material collected through the vortex sampler to collect large particulate and the flat fiber filters (0.45 micron) to collect smaller particulate represent the particulate fraction and is submitted in a single container for extraction and analysis. The results for each matrix are reported by the laboratory as mass per sample. The dissolved phase surface water constituents are absorbed on XAD-2 resin, which is submitted to the laboratory for extraction and analysis. The whole water concentration for a sample location will be calculated using the sum of the particulate and dissolved surface water results and adjusted based on the total volume of water passed through the sampler as adjusted for fractionation during the sample preparation and analysis. For example, if the extract is not fractionated by the laboratory for cleanup and the volume of water during sampling was 400 liters, the total of the particulate and dissolved results for each constituent in mass/sample will be divided by 400 to calculate the whole water concentration in mass/volume units in the sample collected. If the sample is fractionated in the laboratory for cleanup, then the percentage of the total extract volume for each fraction is included in the calculation by adjusting the water volume sampled. If organochlorine pesticides, PCB congeners, and dioxin/furan extract is one fraction and 75% of the total extract, then the sampling volume of 400 liters will be adjusted to 300 liters to calculate the whole water concentration of organochlorine pesticides, PCB congeners, and dioxin/furan for each sample. This whole water concentration in mass/volume units is compared directly the ROD cleanup concentration for each constituent. The PQLs presented in the table are based on 400 liters of water being collected and fractionated in the laboratory so that 75% of total extract (300 liters) is used for organochlorine pesticide, PCB congeners, and dioxins and furans analysis, and 25% of the total extract (100 liters) is used for the PAH analysis.

⁶ A MS/MSD will not be performed for the 1600 series methods. A laboratory duplicate will be performed at a rate of 1 in 20 samples using the OPR (ongoing precision/recovery sample, essentially a LCS/LCSD). Accuracy and precision values, as well as MDLs, provided by the laboratory. These are presented for informational purposes only. Data review/validation will be based on the most current control limits in effect at the time of analysis.

Abbreviations:	
-- = not provided	mg/L = milligrams per liter
µg/L = micrograms per liter	MS = Matrix Spike
BaP = benzo(a)pyrene	MSD = Matrix Spike Duplicate
BEHP = Bis(2-ethylhexyl) phthalate	NA = not applicable
CAS = Chemical Abstract Service	PAH = polycyclic aromatic hydrocarbons
cPAH = carcinogenic polycyclic aromatic hydrocarbons	PARCCS = Precision, Accuracy, Representativeness, Completeness, Comparability and Sensitivity
DDx = dichlorodiphenyltrichloroethane and its	PCB = polychlorinated biphenyl
EPA = Environmental Protection Agency	PP = peristaltic pump method
LCS = Laboratory Control Sample	ROD = record of decision
LCSD = Laboratory Control Sample Duplicate	RPD = Relative Percent Difference
MCPD = methylchlorophenoxypyropionic acid	SIM = Selective Ion Monitoring
MDL = Method Detection Limit	SVOC = Semivolatile Organic Compounds
	TA = TestAmerica

Table 2d. Cleanup Levels and Analytical Quantitation Limits for Porewater Samples/Bulk Sediments

PARCCS	Comparability			Sensitivity				Accuracy and Precision							
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits	Achievable Laboratory MDLs	Units	MS/MSD				LCS/LCSD			
								Percent Recovery (%)		RPD (%)	Percent Recovery (%)		RPD (%)		
Porewater															
Arsenic	7440-38-2	TA Seattle	EPA 6020B LL	0.00018	0.0010	0.00027	mg/L	80	--	120	20	80	--	120	20
Manganese	7439-96-5	TA Seattle	EPA 6020B LL	0.430	0.0020	0.000459	mg/L	80	--	120	20	80	--	120	20
Bromide ²	24959-67-9	TA Seattle	EPA 300.0	NA	1.00	0.25	mg/l	80	--	120	20	90	--	110	10
Bulk Sediment															
Arsenic	7440-38-2	TA Seattle	EPA 6020B	3	0.50	0.10	mg/kg	80	--	120	20	80	--	120	20
Manganese	7439-96-5	TA Seattle	EPA 6020B	NA	2.0	0.453	mg/kg	80	--	120	20	80	--	120	20

Notes

bold font indicates that the project quantitation limit and method detection limit do not meet the ROD cleanup level

¹ From Table 17 of the ROD

² Bromide will be used as a chemical tracer to evaluate achievement of equilibrium in porewater samplers.

Accuracy and precision values, as well as MDLs, provided by the laboratory. These are presented for informational purposes only. Data review/validation will be based on the most current control limits in effect at the time of analysis.

Abbreviations

-- = not provided

CAS: Chemical Abstract Service

EPA = Environmental Protection Agency

LCS = Laboratory Control Sample

LCSD = Laboratory Control Sample Duplicate

MDL = Method Detection Limit

mg/kg = milligrams per kilogram

mg/L = milligrams per liter

MS = Matrix Spike

MSD = Matrix Spike Duplicate

NA = not applicable

PARCCS = Precision, Accuracy, Representativeness, Completeness, Comparability and Sensitivity

RPD = Relative Percent Difference

TA = TestAmerica

TBD = To Be Determined

Table 2e. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in SMB Fish Tissue Samples

PARCCS:		Comparability		Sensitivity				Accuracy and Precision							
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits	Achievable Laboratory MDLs	Units (wet weight)	MS/MSD ³				LCS/LCSD ³			
								Percent Recovery (%)		RPD (%)	Percent Recovery (%)		RPD (%)		
Chlorinated Pesticides + Hexachlorobenzene ²															
Aldrin	309-00-2	SGS AXYS	MLA-028/EPA 1699	0.06	0.02	NA	µg/kg	--	--	--	40	70	--	130	40
Chlordanes (alpha, gamma, technical)	57-74-9	SGS AXYS	MLA-028/EPA 1699	3	0.02	NA	µg/kg	--	--	--	40	70	--	130	40
DDx	NA	SGS AXYS	MLA-028/EPA 1699	3	NA	NA	µg/kg	--	--	--	--	--	--	--	--
2,4-DDD	53-19-0	SGS AXYS	MLA-028/EPA 1699	NA	0.02	NA	µg/kg	--	--	--	40	70	--	130	40
4,4-DDD	72-54-8	SGS AXYS	MLA-028/EPA 1699	NA	0.02	NA	µg/kg	--	--	--	40	70	--	130	40
2,4-DDE	3424-82-6	SGS AXYS	MLA-028/EPA 1699	NA	0.02	NA	µg/kg	--	--	--	40	70	--	130	40
4,4-DDE	72-55-9	SGS AXYS	MLA-028/EPA 1699	NA	0.02	NA	µg/kg	--	--	--	40	70	--	130	40
2,4-DDT	789-02-6	SGS AXYS	MLA-028/EPA 1699	NA	0.02	NA	µg/kg	--	--	--	40	70	--	130	40
4,4-DDT	50-29-3	SGS AXYS	MLA-028/EPA 1699	NA	0.02	NA	µg/kg	--	--	--	40	70	--	130	40
Dieldrin	60-57-1	SGS AXYS	MLA-028/EPA 1699	0.06	0.05	NA	µg/kg	--	--	--	40	60	--	130	40
Hexachlorobenzene	118-74-1	SGS AXYS	MLA-028/EPA 1699	0.6	0.01	NA	µg/kg	--	--	--	40	70	--	130	40
Dioxins and Furans ²															
Dioxins/Furans (2,3,7,8-TCDD eq)	NA	SGS AXYS	MLA-017/EPA 1613B	NA	NA	NA	NA	--	--	--	--	--	--	--	--
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1746-01-6	SGS AXYS	MLA-017/EPA 1613B	0.000008	0.00005	NA	µg/kg	--	--	--	40	70	--	130	40
1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	40321-76-4	SGS AXYS	MLA-017/EPA 1613B	0.000008	0.00005	NA	µg/kg	--	--	--	40	70	--	130	40
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	39227-28-6	SGS AXYS	MLA-017/EPA 1613B	NA	0.00005	NA	µg/kg	--	--	--	40	70	--	130	40
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	57653-85-7	SGS AXYS	MLA-017/EPA 1613B	NA	0.00005	NA	µg/kg	--	--	--	40	76	--	130	40
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	19408-74-3	SGS AXYS	MLA-017/EPA 1613B	NA	0.00005	NA	µg/kg	--	--	--	40	70	--	130	40
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	35822-46-9	SGS AXYS	MLA-017/EPA 1613B	NA	0.00005	NA	µg/kg	--	--	--	40	70	--	130	40
1,2,3,4,5,6,7,8-Octachlorodibenzo-p-dioxin (OCDD)	3268-87-9	SGS AXYS	MLA-017/EPA 1613B	NA	0.00005	NA	µg/kg	--	--	--	40	78	--	130	40
2,3,7,8-Tetrachlorodibenzofuran (TCDF)	51207-31-9	SGS AXYS	MLA-017/EPA 1613B	0.00008	0.00005	NA	µg/kg	--	--	--	40	70	--	130	40
1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	57117-41-6	SGS AXYS	MLA-017/EPA 1613B	NA	0.00005	NA	µg/kg	--	--	--	40	80	--	130	40
2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	57117-31-4	SGS AXYS	MLA-017/EPA 1613B	0.00003	0.00005	NA	µg/kg	--	--	--	40	70	--	130	40
1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	70648-26-9	SGS AXYS	MLA-017/EPA 1613B	0.00008	0.00005	NA	µg/kg	--	--	--	40	72	--	130	40
1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	57117-44-9	SGS AXYS	MLA-017/EPA 1613B	NA	0.00005	NA	µg/kg	--	--	--	40	84	--	130	40
1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	72918-21-9	SGS AXYS	MLA-017/EPA 1613B	NA	0.00005	NA	µg/kg	--	--	--	40	78	--	130	40
2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	60851-34-5	SGS AXYS	MLA-017/EPA 1613B	NA	0.00005	NA	µg/kg	--	--	--	40	70	--	130	40
1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	67562-39-4	SGS AXYS	MLA-017/EPA 1613B	NA	0.00005	NA	µg/kg	--	--	--	40	82	--	122	40
1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	55673-89-7	SGS AXYS	MLA-017/EPA 1613B	NA	0.00005	NA	µg/kg	--	--	--	40	78	--	130	40
1,2,3,4,5,6,7,8-Octachlorodibenzofuran (OCDF)	39001-02-0	SGS AXYS	MLA-017/EPA 1613B	NA	0.00005	NA	µg/kg	--	--	--	40	70	--	130	40
Lipids															
Lipids	NA	SGS AXYS	--	NA	--	--	NA	--	--	--	--	--	--	--	--
Metals															
Arsenic	7440-38-2	ALS Kelso	EPA 6020B	0.001	0.5	0.02	mg/kg	70	--	130	20	75	--	125	20
Mercury	7439-97-6	ALS Kelso	EPA 7471A	0.031	0.02	0.002	mg/kg	80	--	120	20	72	--	128	20
Polybrominated Diphenyl Ethers ²															
PBDEs	TBD	SGS AXYS	MLA-033/EPA 1614	26,000	1 to 20	NA	pg/g	--	--	--	--	--	--	--	--
BR2-DPE-7	171977-44-9	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR2-DPE-8/11	147217-71-8/ 6903-63-5	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR2-DPE-10	51930-04-2	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR2-DPE-12/13	189084-59-1/ 83694-71-7	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g		--	--	40	50	--	150	40
BR2-DPE-15	2050-47-7	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR3-DPE-17/25	147217-75-2/ 147217-77-4	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40

Table 2e. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in SMB Fish Tissue Samples

PARCCS:		Comparability		Sensitivity				Accuracy and Precision							
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits	Achievable Laboratory MDLs	Units (wet weight)	MS/MSD ³				LCS/LCSD ³			
								Percent Recovery (%)		RPD (%)		Percent Recovery (%)		RPD (%)	
BR3-DPE-28/33	41318-75-6/ 147217-78-5	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR3-DPE-30	155999-95-4	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR3-DPE-32	189084-60-4	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR3-DPE-35	147217-80-9	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR3-DPE-37	147217-81-0	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR4-DPE-47	5436-43-1	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR4-DPE-49	243982-82-3	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR4-DPE-51	189084-57-9	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR4-DPE-66	189084-61-5	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR4-DPE-71	189084-62-6	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR4-DPE-75	189084-63-7	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR4-DPE-77	93703-48-1	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR4-DPE-79	446254-48-4	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR5-DPE-85	182346-21-0	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR5-DPE-99	60348-60-9	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR5-DPE-100	189084-64-8	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR5-DPE-105	373594-78-6	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR5-DPE-116	189084-65-9	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR5-DPE-119/120	189084-66-0/ 417727-71-0	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR5-DPE-126	366791-32-4	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR6-DPE-128	182677-28-7	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR6-DPE-138/166	182677-30-1/ 189084-58-0	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR6-DPE-140	243982-83-4	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR6-DPE-153	68631-49-2	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR6-DPE-154	207122-15-4	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR6-DPE-155	35854-94-5	SGS AXYS	MLA-033/EPA 1614	NA	1.0	NA	pg/g	--	--	--	40	50	--	150	40
BR7-DPE-181	189084-67-1	SGS AXYS	MLA-033/EPA 1614	NA	2.0	NA	pg/g	--	--	--	40	50	--	150	40
BR7-DPE-183	207122-16-5	SGS AXYS	MLA-033/EPA 1614	NA	2.0	NA	pg/g	--	--	--	40	50	--	150	40
BR7-DPE-190	189084-68-2	SGS AXYS	MLA-033/EPA 1614	NA	2.0	NA	pg/g	--	--	--	40	50	--	150	40
BR8-DPE-203	337513-72-1	SGS AXYS	MLA-033/EPA 1614	NA	2.0	NA	pg/g	--	--	--	40	50	--	150	40
BR9-DPE-206 ⁴	63387-28-0	SGS AXYS	MLA-033/EPA 1614	NA	10.0	NA	pg/g	--	--	--	40	50	--	150	40
BR9-DPE-207 ⁴	437701-79-6	SGS AXYS	MLA-033/EPA 1614	NA	10.0	NA	pg/g	--	--	--	40	50	--	150	40
BR9-DPE-208 ⁴	NA	SGS AXYS	MLA-033/EPA 1614	NA	10.0	NA	pg/g	--	--	--	40	50	--	150	40
BR10-DPE-209	1163-19-5	SGS AXYS	MLA-033/EPA 1614	NA	20.0	NA	pg/g	--	--	--	40	50	--	150	40
PCB Congeners²															
Total PCBs		SGS AXYS	MLA-010/EPA 1668A	250		NA	pg/g	--	--	--	--	--	--	--	--
CL1-PCB-1	2051-60-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL1-PCB-2	2051-61-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL1-PCB-3	2051-62-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL2-PCB-4	13029-08-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40

Table 2e. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in SMB Fish Tissue Samples

Parameter	PARCCS:	Comparability		Sensitivity				Accuracy and Precision							
	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits	Achievable Laboratory MDLs	Units (wet weight)	MS/MSD ³				LCS/LCSD ³			
								Percent Recovery (%)		RPD (%)		Percent Recovery (%)		RPD (%)	
CL2-PCB-5	16605-91-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL2-PCB-6	25569-80-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL2-PCB-7	33284-50-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL2-PCB-8	34883-43-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL2-PCB-9	34883-39-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL2-PCB-10	33146-45-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL2-PCB-11	2050-67-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL2-PCB-12/13	2974-92-7/2974-90-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL2-PCB-14	34883-41-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL2-PCB-15	2050-68-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL3-PCB-16	38444-78-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL3-PCB-17	37680-66-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL3-PCB-19	38444-73-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL3-PCB-21/33	55702-46-0/38444-86-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL3-PCB-22	38444-85-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL3-PCB-23	55720-44-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL3-PCB-24	55702-45-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL3-PCB-25	55712-37-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL3-PCB-26/29	38444-81-4/15862-07-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL3-PCB-27	38444-76-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL3-PCB-28/20	7012-37-5/38444-84-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL3-PCB-30/18	35693-92-6/37680-65-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL3-PCB-31	16606-02-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL3-PCB-32	38444-77-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL3-PCB-34	37680-68-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL3-PCB-35	37680-69-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL3-PCB-36	38444-87-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL3-PCB-37	38444-90-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL3-PCB-38	53555-66-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL3-PCB-39	38444-88-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-41/40/71	52663-59-9/38444-93-8/41464-46-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-42	36559-22-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-43	70362-46-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-44/47/65	41464-39-5/2437-79-8/33284-54-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-45/51	70362-45-7/68194-04-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-46	41464-47-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-48	70362-47-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-50/53	62796-65-0/41464-41-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-52	35693-99-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40

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Parameter	CAS Number	Comparability		Sensitivity				Accuracy and Precision							
		Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits	Achievable Laboratory MDLs	Units (wet weight)	MS/MSD ³				LCS/LCSD ³			
								Percent Recovery (%)		RPD (%)		Percent Recovery (%)		RPD (%)	
CL4-PCB-54	15968-05-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-55	74338-24-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-56	41464-43-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-57	70424-67-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-58	41464-49-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-59/62/75	74472-33-6/54230-22-7/32598-12-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-60	33025-41-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-61/70/74/76	33284-53-6/32598-11-1/32690-93-0/70362-48-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-63	74472-34-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-64	52663-58-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-66	32598-10-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-67	73575-53-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-68	73575-52-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-69/49	60233-24-1/41464-40-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-72	41464-42-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-73	74338-23-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-77	32598-13-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-78	70362-49-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-79	41464-48-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-80	33284-52-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL4-PCB-81	70362-50-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-82	52663-62-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-83/99	60145-20-2/38380-01-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-84	52663-60-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-88/91	55215-17-3/68194-05-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-89	73575-57-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-92	52663-61-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-94	73575-55-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-95/100/93/102/98	38379-99-6/39485-83-1/73575-56-1/68194-06-9/60233-25-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-96	73575-54-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-103	60145-21-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-104	56558-16-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-105	32598-14-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-106	70424-69-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-107/124	70424-68-9/70424-70-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40

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PARCCS:		Comparability		Sensitivity				Accuracy and Precision							
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits	Achievable Laboratory MDLs	Units (wet weight)	MS/MSD ³				LCS/LCSD ³			
								Percent Recovery (%)		RPD (%)	Percent Recovery (%)		RPD (%)		
CL5-PCB-108/119/86/97/125/87	70362-41-3/56558-17-9/55312-69-1/41464-51-1/74472-39-2/38380-02-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-109	74472-35-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-110/115	38380-03-9/74472-38-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-111	39635-32-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-112	74472-36-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-113/90/101	68194-10-5/68194-07-0/37680-73-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-114	74472-37-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-117/116/85	68194-11-6/18259-05-7/65510-45-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-118	31508-00-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-120	68194-12-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-121	56558-18-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-122	76842-07-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-123	65510-44-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-126	57465-28-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL5-PCB-127	39635-33-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-128/166	38380-07-3/41411-63-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-130	52663-66-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-131	61798-70-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-132	38380-05-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-133	35694-04-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-134/143	52704-70-8/68194-15-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-136	38411-22-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-137	35694-06-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-138/163/129/160	35065-28-2/74472-44-9/55215-18-4/41411-62-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-139/140	56030-56-9/59291-64-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-141	52712-04-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-142	41411-61-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-144	68194-14-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-145	74472-40-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-146	51908-16-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-147/149	68194-13-8/38380-04-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-148	74472-41-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40

Table 2e. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in SMB Fish Tissue Samples

Parameter	PARCCS:	Comparability		Sensitivity				Accuracy and Precision							
	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits	Achievable Laboratory MDLs	Units (wet weight)	MS/MSD ³				LCS/LCSD ³			
								Percent Recovery (%)		RPD (%)		Percent Recovery (%)		RPD (%)	
CL6-PCB-150	68194-08-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-151/135/154	52663-63-5/52744-13-5/60145-22-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-152	68194-09-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-153/168	35065-27-1/59291-65-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-155	33979-03-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-156/157	38380-08-4/69782-90-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-158	74472-42-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-159	39635-35-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-161	74472-43-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-162	39635-34-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-164	74472-45-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-165	74472-46-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-167	52663-72-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL6-PCB-169	32774-16-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL7-PCB-170	35065-30-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL7-PCB-171/173	52663-71-5/68194-16-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL7-PCB-172	52663-74-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL7-PCB-174	38411-25-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL7-PCB-175	40186-70-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL7-PCB-176	52663-65-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL7-PCB-177	52663-70-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL7-PCB-178	52663-67-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL7-PCB-179	52663-64-6	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL7-PCB-180/193	35065-29-3/69782-91-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL7-PCB-181	74472-47-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL7-PCB-182	60145-23-5	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL7-PCB-183/185	52663-69-1/52712-05-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL7-PCB-184	74472-48-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL7-PCB-186	74472-49-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL7-PCB-187	52663-68-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL7-PCB-188	74487-85-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL7-PCB-189	39635-31-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL7-PCB-190	41411-64-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL7-PCB-191	74472-50-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL7-PCB-192	74472-51-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL8-PCB-194	35694-08-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL8-PCB-195	52663-78-2	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL8-PCB-196	42740-50-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL8-PCB-197/200	33091-17-7/52663-73-7	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL8-PCB-198/199	68194-17-2/52663-75-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40

Table 2e. Cleanup Levels and Analytical Quantitation Limits for Chemicals of Potential Concern in SMB Fish Tissue Samples

PARCCS:		Comparability		Sensitivity				Accuracy and Precision							
Parameter	CAS Number	Laboratory	Method	ROD Cleanup Levels ¹	Project Quantitation Limits	Achievable Laboratory MDLs	Units (wet weight)	MS/MSD ³				LCS/LCSD ³			
								Percent Recovery (%)		RPD (%)		Percent Recovery (%)		RPD (%)	
CL8-PCB-201	40186-71-8	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL8-PCB-202	2136-99-4	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL8-PCB-203	52663-76-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL8-PCB-204	74472-52-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL8-PCB-205	74472-53-0	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL9-PCB-206	40186-72-9	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL9-PCB-207	52663-79-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL9-PCB-208	52663-77-1	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
CL10-PCB-209	2051-24-3	SGS AXYS	MLA-010/EPA 1668A	NA	0.05	NA	pg/g	--	--	--	40	50	--	150	40
Semivolatile Organic Compounds															
BEHP	117-81-7	ALS Kelso	EPA 8270DSIM	72	2000	12	µg/kg	56	--	136	40	56	--	136	40
Pentachlorophenol	87-86-5	ALS kelso	EPA 8270DSIM	2.5	100	2.5	µg/kg	41	--	105	40	41	--	105	40

Notes:
bold font indicates that the project quantitation limit and method detection limit do not meet the ROD cleanup level.
¹ From Table 17 of the ROD.
² Samples will be reported to the Sample Detection Limit (SDL, equivalent to Estimated Detection Limit [EDL]) which are calculated per sample.
³ A MS/MSD will not be performed for the 1600 series methods. A laboratory duplicate will be performed at a rate of 1 in 20 samples using sample volume or the OPR (ongoing precision/recovery sample, essentially a LCS/LCSD).
⁴ Concentration of compound is an estimated maximum value as it may originate from BR10-DPE-209 breakdown.
Accuracy and precision values, as well as MDLs, provided by the laboratory. These are presented for informational purposes only. Data review/validation will be based on the most current control limits in effect at the time of analysis.

Abbreviations:
-- = not provided
µg/kg = micrograms per kilogram
BEHP = Bis(2-ethylhexyl) phthalate
CAS = Chemical Abstract Service
EPA = Environmental Protection Agency
DDx = dichlorodiphenyltrichloroethane and its derivatives
LCS = Laboratory Control Sample
LCSD = Laboratory Control Sample Duplicate
MDL = Method Detection Limit
mg/kg = milligrams per kilogram
MS = Matrix Spike

MSD = Matrix Spike Duplicate
NA = not applicable
PARCCS = Precision, Accuracy, Representativeness, Completeness, Comparability and Sensitivity
PCB = polychlorinated biphenyl
ROD = record of decision
RPD = Relative Percent Difference
SMB = smallmouth bass
TA = TestAmerica

Table 3. Data Quality Objectives for Individual Project Tasks

DQO STEP	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	STEP 6	STEP 7
Task	State the Problem	Identify the Goals of the Study (excerpted from Table 4 of PDI Work Plan)	Identify the Information Inputs	Define the Boundaries of the Study	Determine the Analytic Approach (excerpted from Table 8 of PDI Work Plan)	Specify Performance or Acceptance Criteria	Describe the Plan for Obtaining the Data
Bathymetry Survey	The most recent bathymetry survey was conducted in 2002. The new bathymetry survey will document current bed elevations relative to the remedial technology assignment requirements and assess changes in elevation/sedimentation over the past 15 years.	Obtain SMA baseline characterization data adequate to refine the remedial footprint for allocation purposes (goal 1) and establish current baseline conditions (goal 2).	Multi-beam sonar throughout the site, supplemented with lead-line and single-beam measurements in difficult to access areas.	Geographic Boundary: The bathymetry survey will be conducted over the entire Site from RM 1.9 to RM 11.8. Temporal Boundary: The bathymetry survey will be conducted during the first quarter of 2018.	Run the new 2018 surface sediment data and bathymetry data through the ROD decision tree to refine the active remedy footprint. Changes in sediment elevation will be a modifying factor for volume estimates to inform the 30% design estimates.	Decisions concerning the bathymetry survey are expected to be straightforward. Ground truthing of the digital terrain model created from the bathymetric survey will provide an assessment tool to determine the acceptability of the dataset.	A bank-to-bank survey using multi-beam sonar will be conducted throughout the Site in the first quarter of 2018. The rationale for the testing strategy is further explained in the PDI Work Plan and task-specific FSP.
Surface Sediment Sampling	Many of the surface sediment data for the Site are over 10 years old. Updating the surface sediment dataset is key to refining the active remedial SMA footprints and updating the CSM.	Obtain SMA baseline characterization data adequate to refine the remedial footprint for allocation purposes (goal 1), establish current baseline conditions to evaluate future remedy performance (goal 2), evaluate recovery changes within the site (goal 3), and update the upriver reach datasets (goal 4).	428 random stratified surface sediment samples from throughout the site and 178 discrete targeted surface sediment samples located in SMAs and 60 targeted surface sediment samples co-located with sediment cores will be collected. The analytical suite for the samples is shown in Tables 2a and 2b of the QAPP.	Geographic Boundary: The random stratified samples will be distributed over the entire Site from RM 1.9 to RM 11.8, whereas the targeted samples will focus on the SMAs. Upriver samples will be distributed from RM 11.8 to 26.4. Temporal Boundary: The surface sediment samples will be collected in the first half of 2018.	See Table 8.	The acceptance criteria will entail the attainment of laboratory QA/QC results consistent with Section 3 of the QAPP.	The surface sediment samples will be collected from the upper 30 centimeters of sediment from three sampling points at each sampling location and homogenized into a three-point composite sample. The rationale for the sampling locations and analytical strategy is further explained in the PDI Work Plan and task-specific FSP.
Fish Acoustic Tracking Study	A more refined approach is needed to provide fine-scale and presence/absence data that can be used to understand SMB movement in the Study Area.	Establish current baseline conditions (CSM) (goal 2).	A properly designed array of acoustic receivers will be used to provide fine-scale and presence/absence data of SMB.	Geographic Boundary: Within the Site boundaries. Temporal Boundary: Data will be collected over a 1-year period targeting spring 2018 through winter 2019 to capture seasonal home range patterns.	Evaluate the fish tracking results to evaluate the home range of SMB. Maps, home range estimates, and summary tables will be generated. Note: results may inform the fish tissue sampling program and the appropriate scale for calculating baseline conditions with respect to fish; refine the CSM and reduce uncertainty about remedy effectiveness for fish tissue recovery and inform fish consumption advisory updates.	Decisions concerning the fish acoustic tracking study are expected to be straightforward. A pilot test performed in June 2017 included mobile and stationary testing of acoustic tags to evaluate the range of reception and position accuracy of both vendors' systems and will be the basis for Performance Criteria.	An array of acoustic receivers will be mounted to the bottom of the river at a scale appropriate to provide fine-scale and presence/absence data for 1 year.
Fish Tissue Sampling	New baseline data is needed on COC concentrations in fish tissue that have a high site fidelity and limited mobility to establish baseline conditions and to evaluate the degree of accumulation in relation to sediment and surface water concentrations.	Establish current baseline conditions to evaluate future remedy performance (goal 2), evaluate recovery changes within the site (goal 3), and update the upriver reach datasets (goal 4).	95 SMB samples will be collected from five distinct segments within the Site, 20 SMB samples will be collected from the Downtown Reach, and 20 SMB samples will be collected from the Upriver Reach. The analytical suite for the samples is shown in Table 2e of the QAPP.	Geographic Boundary: The fish tissue samples will be collected from five distinct river segments within the Site with an effort to collect samples from the east and west sides of each segment; the samples collected from the D/U Reaches will be distributed throughout the reaches. Temporal Boundary: The fish tissue samples will be collected in summer/fall of 2018.	See Table 8.	The acceptance criteria will entail the attainment of laboratory QA/QC results consistent with Section 3 of the QAPP. Fillet concentrations will be calculated based on whole body/fillet relationships established during the RI.	Whole fish samples will be collected and submitted for analysis. The rationale for the sampling locations and analytical strategy is further explained in the Workplan and task-specific FSP.
Sediment Trap Study	Data on contaminant loading entering the Site from upstream due to deposition of suspended sediment is needed to understand ongoing upstream input to the Site.	Update upriver reach datasets.	Two sediment traps will be deployed along each of two upriver transects. Sediment collected in the traps will be sampled and analyzed for all sediment COCs over three sampling rounds.	Geographic Boundary: Upriver (Downtown Reach) Temporal Boundary: The sediment trap samples will be collected in coordination with the surface water sampling program (three events over 1 year targeting 2018).	Evaluate current upriver conditions by summary distribution statistics for future long-term comparative analysis with Site. Evaluate how new data could inform future evaluation of remedy performance and what is achievable (PDI Work Plan Table 4). Collect additional data regarding upstream conditions and contaminant loading into the Site (Goal 5, Section 1 3 of DUOs of PDI Work Plan).	The acceptance criteria will entail the attainment of laboratory QA/QC results consistent with Section 3 of the QAPP.	Two sediment traps will be deployed at RM 11.8 and 16.2 for about 3 months each. Collected suspended sediment will be sampled over three rounds over a 1-year period.
Subsurface Sediment Coring	The vertical and horizontal extent of subsurface contamination has not been fully defined in SMAs with active remediation by previous studies.	Obtain SMA baseline characterization data adequate to refine the remedial footprint for allocation purposes (goal 1) and evaluate recovery changes within the site (goal 3).	90 subsurface sediment cores will be collected in SMAs that have limited data coverage. Target depths for sampling are based on the vertical extent of contamination observed in surrounding cores and anticipated depth to native material. If the vertical depth of contamination was not reached in a previous core, the depth of the current core will be extended an additional 2 to 4 feet. The analytical suite for the samples is shown in Table 2a of the QAPP.	Geographic Boundary: Sediment cores will be collected from target area within or along SMA boundaries. Temporal Boundary: The subsurface sediment samples will be collected in summer of 2018.	See Table 8.	The acceptance criteria will entail the attainment of laboratory QA/QC results consistent with Section 3 of the QAPP.	The subsurface samples will be subsampled into 2-foot increments (unless stratigraphy indicates otherwise) and homogenized. 1-foot intervals near the bottom of contamination may be archived. The rationale for the sampling locations and analytical strategy is further explained in the PDI Work Plan and task-specific FSP.
Surface Water Study	Surface water data are needed to provide synoptic baseline river conditions along with the sediment and fish tissue data collected as part of this study. Surface water data are also needed to refine the SMS for remedial design purposes.	Same as fish tissue goals.	Seven composite water samples will be collected from five transects distributed across the Site and two transects in the D/U Reaches over three flow conditions (summer low flow, winter high flow, and storm flood-influenced conditions).	Geographic Boundary: Surface water will be collected from river transects at RMs 1.8, 3, 4, 7, 8.8, 11.8, and 16.2. Temporal Boundary: The surface water samples will be collected in summer of 2018.	See Table 8.	The acceptance criteria will entail the attainment of laboratory QA/QC results consistent with Section 3 of the QAPP.	Surface water composite samples will be collected by sampling equal volumes from three locations (east shore, navigation channel, and west shore) and at three depths per location – upper, near bottom, and middle. The rationale for the sampling locations and analytical strategy is further explained in the PDI Work Plan and task-specific FSP.

Table 3. Data Quality Objectives for Individual Project Tasks

DQO STEP	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	STEP 6	STEP 7
Task	State the Problem	Identify the Goals of the Study (excerpted from Table 4 of PDI Work Plan)	Identify the Information Inputs	Define the Boundaries of the Study	Determine the Analytic Approach (excerpted from Table 8 of PDI Work Plan)	Specify Performance or Acceptance Criteria	Describe the Plan for Obtaining the Data
Background Porewater Study	Background metals concentrations in porewater were not defined during previous studies and metals, such as arsenic and manganese, are present in relatively high concentrations in volcanic rock, which is the primary source of Willamette River sediment.	Determine background concentrations of naturally occurring metals COCs in porewater (goal 4).	Porewater samplers will be placed at eight locations in upstream areas or other relevant areas from within the Site.	Geographic Boundary: The porewater sampling boundary is not yet clearly defined, but will likely be upstream of the Site. Temporal Boundary: The porewater samples will be collected in summer of 2018.	Provide sufficient data to derive porewater background for metals (arsenic and manganese) using the passive porewater samples from the upriver reach or other appropriate background areas.	The acceptance criteria will entail the attainment of laboratory QA/QC results consistent with Section 3 of the QAPP.	Porewater peepers will be deployed in triplicate at eight locations for 28 days. After retrieval, samples will be analyzed for arsenic and manganese at an accredited analytical laboratory. The rationale for the sampling locations and analytical strategy is further explained in the PDI Work Plan and task-specific FSP.

Abbreviations

COC = contaminant of concern
CSM = conceptual site model
D/U = downtown/upstream
DQO = Data Quality Objective
FSP = Field Sampling Plan
PCB = polychlorinated biphenyl
QA/QC = quality assurance/quality control
QAPP = Quality Assurance Project Plan

PDI Work Plan = ASAO C Pre-Remedial Design Investigation and Baseline Sampling Work Plan
RAL = remedial action level
RM = river mile
ROD = Record of Decision
SMA = sediment management area
SMB = smallmouth bass
SMS = Sediment Management Standards
SWAC = surface weighted average sediment concentration

last revised by CP on march 21, 2018 to address EPA comments; saved in Seattle P:\Projects\Portland Pre-Design PNG0767A\600 Deliverables (AECOM&Geosyntec)\QAPP\3_Final to EPA (WIP)

Table 4. Sample Nomenclature

Component 1	Component 2	Component 3		Component 4			Component 5	Component 6	
Study Name	Sample Matrix	Type	Sample Station No. (Sequential)	Core Depth Intervals (ft)	Seasonal Sampling Round	Other	Sample Collection Method (surface water only)	QA/QC	
PDI	SG = sediment grab	B = baseline	"B001 thru B428" = baseline at PHSS "B429 thru B489" = downtown/upriver reaches	NA	NA	BL1 = Baseline Round 1	NA	D = Field duplicate	
PDI	SG = sediment grab	S = sediment management area	"S001 through S168" = SMA grabs and cores			0to2, 2to4, 4to6 etc.			
PDI	SC = sediment core								
PDI	WS = water, surface water	T = transect	T01 through T07	NA	1803, 1807 or 1811 (March 2018, July 2018 or Nov. 2018)	NA	XAD, XAD Filter, XADF or PP		
PDI	ST = sediment trap	T= transect	T06a, T06b, T07a, T07b						
PDI	WP = water, porewater	B or S (co-located with a surface sediment grab sample)	B001 - B428 or S001 - S168 (co-located with surface sediment station)		NA			NA	NA
PDI	TF = tissue fish	SMB = smallmouth bass	SMB01 to SMB120						
PDI	AR = Acoustic Receiver	A	A01 to A34						
PDI	AT = Acoustic Tag	SMBT = smallmouth bass tag	SMBT01 to SMBT40						
PDI	RB = rinsate blank	NA	VV, ST, SC, ST, SS, PP, XD,XF (equipment type, see below)						
PDI	TB = trip blank		NA						
								1430 (ime of sample collection if more than one blank is collected in a day; military time)	

Table 4. Sample Nomenclature

Notes:

1) Location ID will be Component 1 and Component 3.

PDI Study Sample Nomenclature Examples

Components are separated by dashes.

Surface Sediment Examples (N=428 baseline; N=60 downtown/upriver reaches; and N=178 SMA)

PDI-SG-B001-BL1 = Pre-design investigation, surface sediment grab, baseline station #001, baseline round 1

PDI-SG-S001 = Pre-design investigation, surface sediment grab, SMA station #001.

PDI-SG-B001-BL1-MSD = Pre-design investigation, surface sediment grab, baseline station #001, baseline round 1, matrix spike duplicate sample

Subsurface Sediment Examples (N=90 stations)

PDI-SC-S001-2to4 = Pre-design investigation, subsurface sediment core, SMA station #1, depth 2 to 4 feet

PDI-SC-S012-4to6-D = Pre-design investigation, subsurface sediment core, SMA station #12, depth 4 to 6 feet, field duplicate

Surface Water Examples

Seven transects on the river and three rounds of sampling.

PDI-WS-T04-1803-XAD = Pre-design investigation, surface water sample, transect #4, collected March 2018, collected with XAD

PDI-WS-T04-1803-PP-MS = Pre-design investigation, surface water sample, transect #4, collected March 2018, collected with peristaltic pump, matrix spike sample

PDI-WS-T01N-1803 = Pre-design investigation, surface water sample, transect #1, collected from navigation channel March 2018

Sediment Trap Examples (N = 4 stations)

Two sediment trap locations at T6 and T7, two stations at each location A and B, and three rounds of sampling.

PDI-ST-T07A-1803 = Pre-design investigation, sediment trap sample, transect 7 station A, from March 2018 sampling round

PDI-ST-T07B-1803-D = Pre-design investigation, sediment trap, transect seven station B, March 2018, field duplicate sample

Porewater Examples (N= 8 stations)

PDI-WP-B001 = Pre-design investigation, porewater sample, co-located with baseline surface sediment station # 1

PDI-WP-S042 = Pre-design investigation, porewater sample, co-located with SMA surface sediment station #42

Fish Tissue Examples (N=135 samples)

PDI-TF-SMB005 = Pre-design investigation, fish tissue, smallmouth bass sample #5

Fish Tracking (N=34 receivers and N=40 fish)

PDI-AR-A032 = Pre-design investigation, acoustic receiver, from receiver station 32

PDI-AT-SMBT40 = Pre-design investigation, acoustic tag placed on individual smallmouth bass with tag #40.

Rinsate Blanks / Equipment Blanks

PDI-RB-SC-180612-1430 = Pre-design investigation, rinsate blank, from sediment core tube, collected June 12, 2018, at 2:30 p.m.

Below is the list of the equipment codes for equipment that will require rinsate blanks

VV = van veen sampler	XD = XAD sampler
SC = sediment core tube	XF = XAD filter
SS = spoons and bowls	ST = sediment trap
PP = peristaltic pump (and carboy)	PW = porewater sampler

Trip Blanks

PDI-TB-180515-0830 = Pre-design investigation, trip blank, collected May 15, 2018 at 8:30 am

Table 5. Sample Containers, Methods, Sample Preservation, and Holding Times

Matrix	Parameter (Analysis)	Method	Sample Container	Preservation	Archive Preservation (up to 1 year)	Holding Time
Sediments	BEHP (SVOC)	EPA 8270D-LL	1x 8-ounce glass jar	Cool to 0-6 C	Freeze to <-10 C	14 days from collection to preparation; 40 days from extraction to analysis
	Chlorinated Pesticides + Hexachlorobenzene	EPA GC/MS/MS1699M	1x 8-ounce amber glass jar	Cool to 0-6 C	Freeze to <-10 C	14 days from collection to preparation; 40 days from extraction to analysis
	Dioxins/Furans	EPA 1613B	1x 8-ounce amber glass jar with Teflon®-lined lid	Cool to 0-6 C and store in the dark until receipt by laboratory. Then store in the dark at <-10 C	Freeze to <-10 C, store in the dark	1 year from collection to preparation; 1 year from extraction to analysis
	Grain Size	ASTM D7928 and D6913	1x 16-ounce glass or plastic jar	NA	NA	None
	Afterberg Limits	ASTM D4318	1x16-ounce plastic jar	NA	NA	None
	Metals	EPA Method 6020B	1x 8-ounce glass jar with Teflon®-lined lid	Cool to 0-6 C	HNO3 to pH <2, store at room temperature	180 days from collection to analysis
	Mercury	EPA Method 7471A	1x 8-ounce glass jar with Teflon®-lined lid	Cool to 0-6 C	Acidify to pH <2, store at room temperature	28 days from collection to analysis
	PAHs	EPA 8270D SIM	1x 8-ounce glass jar	Cool to 0-6 C	Freeze to <-10 C	14 days from collection to preparation; 40 days from extraction to analysis
	PCB Aroclors	EPA 8082A	1x 8-ounce glass jar with Teflon®-lined lid	Cool to 0-6 C	Freeze to <-10 C	14 days from collection to preparation; 40 days from extraction to analysis
	PCB Congeners	EPA 1668A	1x 4-ounce amber glass jar filled 2/3 full	Cool to 0-6 C and store in the dark until receipt by laboratory. Then store in the dark at <-10 C	Freeze to <-10 C	1 year from collection to preparation; 1 year from extraction to analysis
	Total Organic Carbon	EPA Method 9060	1x 4-ounce glass jar	Cool to 0-6 C	NA	28 days from collection to analysis
	Total Solids	EPA 160.3 Modified	1x 4-ounce glass jar	Cool to 0-6 C	NA	7 days from collection to analysis
Fish Tissue	TPH-Diesel	Ecology NWTPH-Dx	1x 8-ounce glass jar with Teflon®-lined lid or stainless steel liner	Cool to 4 C	Freeze to -20 C	14 days from collection to preparation; 40 days from extraction to analysis
	Tributyltin	Krone et al	1x 8-ounce glass jar	Cool to 0-6°C	Freeze to <-10°C	14 days from collection to preparation; 40 days from extraction to analysis
	BEHP + Pentachlorophenol (SVOC)	EPA 8270D SIM	Aluminum Foil in Ziploc bag	Freeze to <-10°C	Freeze to <-10°C	14 days from collection to preparation; 40 days from extraction to analysis
	Chlorinated Pesticides + Hexachlorobenzene	MLA-028/EPA 1699	Aluminum Foil in Ziploc bag	Freeze to <-10°C	Freeze to <-10°C	1 year from collection to preparation; 1 year from extraction to analysis
	Dioxins/Furans	MLA-017/EPA 1613B	Aluminum Foil in Ziploc bag	Freeze to <-10°C	Freeze to <-10°C	
	Lipids	Axys SOP SAL-020	Aluminum Foil in Ziploc bag	Freeze to <-10°C	Freeze to <-10°C	
	Arsenic	EPA Method 6020B	Aluminum Foil in Ziploc bag	Freeze to <-10°C	Freeze to <-10°C	180 days from collection to analysis
	Mercury	EPA Method 7471A	Aluminum Foil in Ziploc bag	Freeze to <-10°C	Freeze to <-10°C	28 days from collection to analysis
Surface Water	PCB congeners	MLA-010/EPA 1668A	Aluminum Foil in Ziploc bag	Freeze to <-10°C	Freeze to <-10°C	1 year from collection to preparation; 1 year from extraction to analysis
	PBDEs	MLA-033 / EPA 1614	Aluminum Foil in Ziploc bag	Freeze to <-10°C	Freeze to <-10°C	
	BEHP	EPA 8270D-LL	1-liter Amber Glass	Cool to 0-6°C	Extracts freeze <-10 C	7 days from collection to preparation; 40 days from extraction to analysis
	High Volume Samples, XAD2 (dissolved phase)		XAD2™ Column	Cool to 0-6°C, store in dark	Extracts freeze <-10 C, store in the dark	1 year from collection to preparation; 1 year from extraction to analysis
	Chlorinated Pesticides + Hexachlorobenzene	MLA-028/EPA 1699				
	Dioxins/Furans	MLA-017/EPA 1613B				
	PCB congeners	MLA-010/EPA 1668A				
	PAHs	MLA-021/EPA8270D/1625M				
	High Volume Samples, Particulate (total fraction)		Solids and flat filters	Containerize in clean glass sample jar. Cool to 0-6 C and store in the dark until receipt by laboratory. Then store in the dark at <-10 C	Extracts freeze <-10 C, store in the dark	1 year from collection to preparation; 1 year from extraction to analysis
	Chlorinated Pesticides + Hexachlorobenzene	MLA-028/EPA 1699				
	Dioxins/Furans	MLA-017/EPA 1613B				
	PCB congeners	MLA-010/EPA 1668A				
	PAHs	MLA-021/EPA8270D/1625M				
	Dissolved Organic Carbon	SM5310B	1x 250-milliliter Amber Glass Bottle	Field filter using 0.45 µm pore-size filter before acidifying, H ₂ SO ₄ , Cool to 0-6	NA	28 days from collection to analysis
	Ethylbenzene	EPA 8260C	3x 40-milliliter VOA vials	HCl to pH<2, Cool to 0-6 C, No Headspace	NA	14 days from collection to analysis
	MCP	EPA 8151A	2x 1-liter Amber Glass Bottles	Cool to 0-6°C	Extracts freeze <-10 C	7 days from collection to preparation; 40 days from extraction to analysis
	Metals	EPA 6010C/6020B LL	1x 250-milliliter HDPE	HNO3 to pH <2	HNO3 to pH <2, store at room temperature	180 days from collection to analysis
	Pentachlorophenol	EPA 8270D SIM	1-Liter Amber Glass	Cool to 0-6°C	Extracts freeze <-10 C	7 days from collection to preparation; 40 days from extraction to analysis
	Total Dissolved Solids	Standard Method 2540C	1x 1-liter HDPE	Cool to 0-6°C	NA	7 days from collection to analysis
	Total Suspended Solids	Standard Method 2540D	1x 1-liter HDPE	Cool to 0-6°C	NA	7 days from collection to analysis
	Tributyltin	Unger et al	1-liter Amber Glass	Cool to 0-6°C	Extracts freeze <-10 C	7 days from collection to preparation; 40 days from extraction to analysis

Table 5. Sample Containers, Methods, Sample Preservation, and Holding Times

Porewater	Metals	EPA Method 6020B	1x 250-milliliter HDPE	HNO ₃ to pH <2	Extracts freeze <-10 C	180 days from collection to analysis
	Anions (Bromide)	EPA Method 300.0	1x125-milliliter HDPE	Cool to 0-6°C	NA	28 days from collection to analysis
Bulk Sediment (adjacent to porewater peepers)	Metals	EPA Method 6020B	1x 8-ounce glass jar with Teflon®-lined lid	Cool to 0-6°C	HNO ₃ to pH <2, store at room temperature	180 days from collection to analysis

Notes:

¹ Dissolved analyses will be field filtered followed by preservation with appropriate acid.

Abbreviations:

ASTM = American Society for Testing and Materials

BEHP = Bis(2-ethylhexyl) phthalate

C = centigrade

DRO = diesel range organics

EPA = United States Environmental Protection Agency

HCL = hydrochloric acid

HDPE = high-density polyethylene

HNO₃ = nitric aAcid

MCPD = methylchlorophenoxypropionic acid

NA = not applicable

PAH = polycyclic aromatic hydrocarbons

PBDEs = polybrominated diphenyl ethers

PCB = polychlorinated biphenyl

SIM = Selective Ion Monitoring

SVOC = semi-volatile organic compound

TPH = total petroleum hydrocarbon

VOA = volatile organic analyte

Table 6. Field Quality Control Sample Frequency

Matrix	Parameter	Trip Blanks	MS/MSD ¹	Equipment Rinsate Blanks ²	Field Duplicate Samples
Sediments	Chlorinated Pesticides + hexachlorobenzene	NA	NA	1 per 20 samples	1 per 20 samples
	Dioxins/Furans		NA	1 per 20 samples	1 per 20 samples
	Grain Size		NA	NA	NA
	Atterberg Limits		NA	NA	NA
	Mercury		1 set/20 samples	1 per 20 samples	1 per 20 samples
	Metals		1 set/20 samples	1 per 20 samples	1 per 20 samples
	PAHs		1 set/20 samples	1 per 20 samples	1 per 20 samples
	PCB Aroclors		1 set/20 samples	1 per 20 samples	1 per 20 samples
	PCB Congeners		NA	1 per 20 samples	1 per 20 samples
	BEHP (SVOC)		1 set/20 samples	1 per 20 samples	1 per 20 samples
	Total Organic Carbon		1 set/20 samples	1 per 20 samples	1 per 20 samples
	TPH-Diesel		1 set/20 samples	1 per 20 samples	1 per 20 samples
	Tributyltin		1 set/20 samples	1 per 20 samples	1 per 20 samples
Fish Tissue	Chlorinated Pesticides/ Hexachlorobenzene	NA	NA	NA	NA
	Dioxins/Furans		NA		
	Lipids		NA		
	Mercury		1 set/20 samples		
	Metals		1 set/20 samples		
	PBDEs		NA		
	PCB Congeners		NA		
	BEHP/PCP (SVOCs)		1 set/20 samples		
Surface Water³	Chlorinated Pesticides/Hexachlorobenzene	NA	NA	1 per 20 samples	NA
	Dioxins/Furans	1 per cooler of VOC samples	NA	1 per 20 samples	NA
	Ethylbenzene		1 set/20 samples	1 per 20 samples	1 per 20 samples
	MCCP	NA	1 set/20 samples	1 per 20 samples	1 per 20 samples
	Metals		1 set/20 samples	1 per 20 samples	1 per 20 samples
	PAHs		NA	1 per 20 samples	NA
	PCB Congeners		NA	1 per 20 samples	NA
	BEHP/PCP (SVOCs)		1 set/20 samples	1 per 20 samples	1 per 20 samples
	Dissolved Organic Carbon		1 set/20 samples	1 per 20 samples	1 per 20 samples
	Total Dissolved Solids		NA	1 per 20 samples	1 per 20 samples
	Total Suspended Solids		NA	1 per 20 samples	1 per 20 samples
	Tributyltin		1 set/20 samples	1 per 20 samples	1 per 20 samples
Porewater	Metals	NA	1 set/20 samples	NA	NA
	Anions (bromide)	NA	NA	NA	NA
Bulk Sediment (adjacent to porewater peepers)	Metals	NA	1 set/20 samples	1 per 20 samples	1 per 20 samples

Notes:

¹ Field personnel must collect triple volume to account for MS/MSD samples where needed. Analyses performed by 1600 series methods will not require MS/MSD.

² No equipment blanks are required for disposable or dedicated field sampling equipment. Filter blank will be conducted for XAD surface water samplers, one per event. Equipment blanks will target about one per week, one per event, or one per piece of equipment for overall project average of 1 per 20 samples.

³ Field duplicates will only be collected and analyzed on samples collected by peristaltic pump.

Abbreviations:

MCCP = methylchlorophenoxypropionic acid
 BEHP = Bis(2-ethylhexyl) phthalate
 MS/MSD = Matrix Spike/Matrix Spike Duplicate
 NA = not applicable
 PAH = polycyclic aromatic hydrocarbons
 PBDEs = polybrominated diphenyl ethers

PCB = polychlorinated biphenyl
 PCP = pentachlorophenol
 SVOCs = semi volatile organic compounds
 TPH = total petroleum hydrocarbon
 VOC = volatile organic compound

Table 7. Laboratory Quality Control Sample Frequency

Matrix	Parameter	Method	Method Blanks	MS/MSD	LCS/LCSD	Laboratory Duplicate	Surrogate Recovery
Water/ Sediment/ Tissue	Chlorinated Pesticides/Hexachlorobenzene	EPA GC/MS/MS 1699M or MLA-028/EPA 1699	1 per extraction batch	NA	Per method	1 per 20 samples	Per method
	Ethylbenzene	EPA 8260C	1 per analytical batch	1 per 20 samples	1 per analytical batch	NA	Per method
	BEHP and/or PCP	EPA 8270D-LL or EPA 8270DSIM	1 per extraction batch	1 per 20 samples	1 per extraction batch	NA	Per method
	PAHs	EPA 8270D-SIM or MLA-021/EPA 8270D/1625M	1 per extraction batch	1 per 20 samples ¹	1 per extraction batch ¹	1 per 20 samples	Per method
	MCPP	EPA 8151A	1 per extraction batch	1 per 20 samples	1 per extraction batch	NA	Per method
	PCB Aroclors	EPA 8082A	1 per extraction batch	1 per 20 samples	1 per extraction batch	NA	Per method
	TOC / DOC	EPA 9060 or SM5310B	1 per extraction batch	1 per 20 samples	1 per extraction batch	NA	NA
	PCB Congeners	EPA 1668A	1 per extraction batch	NA	Per method	1 per 20 samples	Per method
	Dioxins/Furans	EPA 1613B or MLA-017/EPA 1613B	1 per extraction batch	NA	Per method	1 per 20 samples	Per method
	TPH-DRO	Ecology NWTPH-Dx	1 per extraction batch	1 per 20 samples	1 per extraction batch	NA	Per method
	Tributyltin	Unger et al.	1 per extraction batch	1 per 20 samples	1 per extraction batch	1 per 10 samples	Per method
	Lipids	NA	NA	NA	NA	1 per 20 samples	NA
	Metals	EPA 6020B LL/6010C	1 per digestion batch	1 per 20 samples	1 per digestion batch	1 per 10 samples	NA
	Mercury	EPA 7471A	1 per digestion batch	1 per 20 samples	1 per digestion batch	1 per 10 samples	NA
	PDBEs	MLA-033/EPA 1614	1 per extraction batch	NA	Per method	1 per 20 samples	Per method
	Anions	EPA 300.0	1 per analytical batch	NA	1 per analytical batch	1 per 10 samples	NA
	Grain Size	ASTM D422	NA	NA	NA	Triplicate analysis per 20 samples	NA
	Atterberg Limits	ASTM D4943	NA	NA	NA	NA	NA
	Total Dissolved Solids	SM 2540C	1 per analytical batch	NA	1 per analytical batch	1 per 10 samples	NA
	Total Suspended Solids	SM 2540D	1 per analytical batch	NA	1 per analytical batch	1 per 10 samples	NA
	Total Solids	EPA 160.3M	1 per analytical batch	NA	NA	1 per 10 samples	NA

Footnote:

¹ Frequency noted is for samples analyzed by EPA 8270D-SIM. An MS/MSD is not required for method EPA 8270D/1625M. An LCS will be performed per method requirements.

Abbreviations:

DRO = Diesel Range Organics

ASTM = American Society for Testing and Materials

BEHP = Bis(2-ethylhexyl) phthalate

EPA = Environmental Protection Agency

LCS = Laboratory Control Sample

LCSD = Laboratory Control Sample Duplicate

MCPP = methylchlorophenoxypropionic acid

MS = Matrix Spike

MSD = Matrix Spike Duplicate

NA = Not Applicable

PAH = polycyclic aromatic hydrocarbons

PBDEs = polybrominated diphenyl ethers

PCB = polychlorinated biphenyl

PCP = pentachlorophenol

SM = Standard Method

TPH = total petroleum hydrocarbon

Table 8. Data Interpretation and Analysis Plan (copy of Table 8 of PDI Work Plan)

Table 8. Data Interpretation and Analysis Plan

Portland Harbor Pre-Remedial Design Investigation Work Plan

Portland, OR

Data Utilization	Description
Current Conditions and Sediment SWACs for baseline dataset	Generate summary tables and maps with the new 2018 data and baseline the river for sediment, SMB fish tissue, and surface water for media-specific COCs and selected other COCs. Generate sediment SWACs for the Site on a site-wide and other spatial scales using Theissen Polygons for the 606-sample plan, and the statistical mean for both the stratified random 428 sample plan and 606 sample plan.
Concentration Changes Over Time (focused COCs)	Provide plot of the tissue data over time. Provide surface water data with simple data plots of baseline and previous applicable surface water data. Compare the new 2018 data to the RI/FS dataset for sediment (2004 in particular), tissue (2002, 2007 and 2012), and surface water media, and evaluate changes since the RI: (1) The new sediment SWAC and arithmetic mean of unbiased dataset (stratified random) will be compared to the 2004 data at site-wide, segment-wide scales, and river mile-scales to look for differences in the last 14 years. (2) Datasets will also be compared to the Downtown/Upriver Reaches (are the three populations different, how different, and is site recontamination expected?). (3) Additional surface sediment locations may be re-occupied from 2004, and these two populations will be compared for changes. <i>Note: The data permits statistical comparisons at the site-wide and other spatial scales such as rolling river mile one-side, 21 segments (10 segments with east and west side plus Swan Island Lagoon), and 9 segments (8 segments each 2 to 3 miles one-side plus Swan Island Lagoon).</i>
Alt F Mod Active SMA Footprint (1)	Refine the SMA footprints using new data collected during the PDI. SMA delineation activity to evaluate these data, bathymetry, and applicable historical data will be run through the ROD decision tree to support allocation. Run the new 2018 surface sediment data and bathymetry data through the ROD decision tree to refine the active remedy footprint. The 2018 core data will be combined with RI/FS subsurface coring data to update the conceptual site model understanding of subsurface contamination, collectively these data will also run through the ROD decision tree to refine the active remedy footprint and dredge volume estimate. Changes in sediment elevation will be a modifying factor for volume estimates to inform the 30% design estimates.
Downtown/Upriver Baseline	Report data separately to EPA by reach (Downtown / Upriver Reach). Evaluate current upriver conditions by SWAC and summary distribution statistics for other media, for future long-term comparative analysis with Site. Generate tables, maps, and summary statistics for all new 2018 data (sediment, SMB tissue, surface water, and sediment traps) as 2018 baseline conditions. These data may be compared to new site data, and qualitatively compared to older downtown/upriver data to evaluate changes and provide a first look at what may be achievable at the site for focused COCs.
Background Porewater	Provide porewater data to EPA, provide sufficient data to derive porewater background for metals using the passive porewater samples from the upriver reach or other appropriate background areas (see EPA March 13, 2017 framework).
Fish Tracking Results	Provide fish tracking data to be presented as a tabular spreadsheet deliverable that includes location, tag IDs, and time stamps for each of the tagged fish. Data processing for data report limited to tabular and graphical outputs showing locations/tag IDs of fish movement (e.g. heat maps). Evaluate the fish tracking results to evaluate the home range of SMB. Maps, home range estimates, and summary tables will be generated. <i>Note: results may inform the fish tissue sampling program and the appropriate scale for calculating baseline conditions with respect to fish; refine the CSM and reduce uncertainty about remedy effectiveness for fish tissue recovery and inform fish consumption advisory updates.</i>
Data Design for Long-term Monitoring	The PDI Evaluation Report will include an evaluation of the 2018 data for purpose of potentially focusing the list of COCs for future monitoring rounds.

Notes:

(1) Pre-Design Core data collection may have limitations for characterizing final SMA footprint delineation. Accordingly, any final decision on the SMA footprint will be pending full remedial design and confirmation sampling results obtained during remedy implementation.

Abbreviations:

COCs - chemicals of concern; CSM - conceptual site model; PDI - pre-remedial design investigation; RI/FS - remedial investigation/feasibility study; RAO - remedial action objective; RM - river mile; ROD - Record of Decision; SMA - sediment management area; SMB - small mouth bass; SWAC - surface weighted average concentrations

Note: New Table